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The Proprietor of this Journal offered, during the last year, a premium of one hundred dollars for the best Essay on the Epidemic fevers which have afflicted our country for the last few years. Many were received from various parts of the United States, and the premium was awarded to the Essay which commences this number, to which we earnestly recommend the attention of the Profession. The usefulness of the design will, we think, be found to be fully supported by the respectability of the memoir, not only as it embraces many of the opinions, on this interesting subject, which have been accumulated in the United States and Europe, in the periodical and other publications, but also, as it gives the result of the experience of an able practitioner, whose philosophical acumen is equalled only by his judgment and his zeal.

The Subscribers, appointed by Mr. James Webster to examine a number of Essays purporting to be histories of the late Epidemics, having carefully read the same, are unanimously of opinion that the one bearing the motto of "Veritas non filia est auctoritatis," is the best entitled to the proposed premium.

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Philadelphia, April 8th, 1824.

ART. I. *An Essay on Epidemic Fevers.* By JOHN E. COOKE, M.D. of Frederick County, Virginia.

THE most essential circumstance connected with the origin of autumnal epidemics, is the necessity of heat to their production. The colder countries of the temperate zones, are comparatively exempt from these scourges. As we travel south, they become more common and more violent, display-

ing all their terrors in the equatorial regions. They never arise in winter, and when raging in the autumnal months, an immediate stop is put to their further progress by frost, and the accompanying cool winds from the north, in those countries far enough north to enjoy their benefit; within the tropics no season is exempt from their occasional appearance, and in some parts they prevail throughout the year.*

Heat alone, is not, however, sufficient. Our hottest seasons are, in some situations, often the healthiest. The excessively dry summer of 1822, was very much so in most parts of the country. Lind states that the dry season in Senegal, the hottest part of the year in that country, is healthy. The inhabitants near the great desert of Africa, are remarkably free from such epidemics; and the diseases of Egypt never spread into the neighbouring desert occupied by the Bedouin Arabs.† Heat therefore, though essential to the existence of these diseases, does not alone produce them.

In the hot countries within the tropics, in general, the hot and dry season is healthy. But soon after the rains commence, they become sickly. Lind,‡ speaking of Guinea, says, "This, as most tropical countries, has, properly speaking, only two seasons, the wet and the dry. The former is commonly of about four months continuance, and is the season of sickness; whereas for many months in the dry season, most parts of this country are equally healthy and pleasant with any in the world."§ No sooner, however, do the rains set in, than the ravages of disease commence and continue throughout the wet season, and afterwards, until the abundant moisture be evaporated. As soon as this is effected, the health of the country is restored, except in those places which continue wet throughout the year.

The rainy season, and the sickly season, are synonymous terms. This agrees with what is observed in Europe and America. Dr. Wind, a Dutch writer, quoted by Lind,‖ observes, that at Middleburg, the capital of West Zealand, a disease generally reigns toward the end of August or the beginning of September, which makes its appearance after the rains which generally fall in the latter end of July.

In this country precisely the same thing occurs. Wet seasons are the most universally sickly; and dry ones, though hot, are healthy. Thus the wet years 1804, 1821, 1823, were very sickly, and the very dry year 1822 very healthy: and although, in very dry seasons, some places are very sickly, these are uni-

* Lind on Hot Climates, Borneo, &c. † Burkhardt's travels, Quart. Review, No. 44. ‡ P. 33. § See also p. 41, and Hillary, p. 25. ‖ p. 19.

formly situated near water courses, or marshes; of this, Harper's Ferry and Shepherdstown on the Potowmac river are striking instances. Examples of this kind might easily be multiplied. Moisture then is also essential to the production of these diseases.

Heat and moisture, however, though both essential, are not sufficient to produce them. Vessels at sea, or at a small distance from land, in the hottest climates, even in the rainy season, continue healthy if they be kept clean. Lind, from this circumstance, even advises those who are able, to retreat to floating habitations duringly the sickly season.*

Many instances are mentioned of vessels in port, immediately on the appearance of disease among their crew, pushing out to sea with the effect of immediately stopping the progress of the disease! In the immense swamps of the south, before the forests are cut down, there is little sickness even in hot weather; and instances have often occurred of a fever being checked by a superabundance of moisture. Thus a bilious fever was arrested in Brabant by inundating a marsh in the neighbourhood; and Sir John Pringle tells us the inhabitants of Breda adopted the same expedient with success. Excessive rains have produced the same effect. Something more than heat and moisture then is necessary; this additional circumstance is easily discoverable by attention to the situation and circumstances of the places most liable to these diseases.

In the tropical countries, those spots where sickness prevails throughout the year, as Benin, New and Old Calabar, &c.,† are low and marshy. All those cities and stations in Africa, Asia, and America, which have been the graves of unnumbered thousands, are situated at the mouths or on the banks of rivers in flat countries, which in the rainy season become one vast morass.‡ In more temperate climates, similar spots are the seat of similar diseases in the summer and fall. Such are the Campania Di Roma, and many other parts of Europe. Such in the United States are the rice swamps of the south, and the swampy countries on the sea coast from Delaware Bay, southward. If we look around us in our own immediate neighbourhood, we shall observe the same facts. The marshes, the river bottoms rendered similar to marshes by the heat of summer, the artificial morasses produced by building mill-dams, are the spots noted for disease. Of this every neighbourhood affords instances.

* Lind, p. 89. 92. 118. 132. 133. † Ibid. p. 34. ‡ Ibid. p. 31. 32. 37. 51.

On the other hand, places formerly unhealthy on account of the neighbourhood of a morass, have been rendered healthy by draining it. Dr. Lane of Centreville informed me that the family of one of his friends was unhealthy every summer. In 1821 the disease began very early, and he told his friend that he considered an old ruinous mill-pond near the house as the cause, and advised him to drain it. This was immediately done, and as soon as the bottom became dry, the family became healthy, even before the sickly season had passed in the neighbourhood.

So also places situated at a distance from marshes or low grounds, are comparatively free from disease. Centreville in Fairfax county, is situated on an elevated, dry, slaty ground; it may be seen from a great number of places for many miles around. In the sickly fall of 1821 there occurred, Dr. Lane informed me, but two cases of this fever in the town, although the sick in the neighbourhood were so numerous, that he scarce had time to sleep. On inquiring into the source whence these two persons could have derived the fever, one, Mrs. L. it was recollected, had spent three weeks at the house of his friend above mentioned, before the draining of the pond, and was taken sick soon after returning home. The other was a paralytic person, who sat listening to our conversation. She stated that there was a pond in her yard; that she was in the habit of sitting hours together near a back door for the benefit of the air, and that the wind was blowing immediately over the pond upon her, at the moment she was taken with the chill which ushered in the attack.

Places formerly healthy, have often been rendered unhealthy by an artificial morass, as is witnessed in every neighbourhood, when a new mill-dam is built.

Harrisburg in Pennsylvania, situated between the Susquehanna river and a small creek, and extending nearly or quite from one to the other, affords a striking example. In the year 1793 a dam was built across the creek in the rear of the town, and thereby produced a very extensive and shallow pond. In the fall of the year succeeding, a mortal fever prevailed in the town; the people attributed it to the pond, and insisted on having the dam removed. With some difficulty they succeeded; the pond was completely drained, and the town was as healthy afterwards, as it had been before that time. Examples under each of these different heads might easily be multiplied.

We find then that in all parts of the temperate zones, and between the tropics, the neighbourhood of marshes is particularly favourable to the production of fevers. These spots are,

during the summer, chiefly masses of putrefying vegetable matter; and therefore it is in the highest degree probable, that some product of putrefying vegetable matter is the cause of this evil.

It has been conjectured that mineral exhalations are the pestilent agents. Marshes however, in the neighbourhood of which these diseases chiefly appear, seldom contain minerals: neither is it likely that every marsh contains them. Mountains, or at least hilly countries, in general healthy, have been found to be the depositories of ores. "There is no room for mineralogy in the district of the Delta, nor does the valley of the Nile in any part afford subjects for the investigation of that science," and this is a country remarkable for disease. A place too may be made sickly by making it marshy, by means of a dam across a stream, and may be made healthy again as easily by removing it. Frost puts an end to the putrefaction of vegetable matter, but has no effect on mineral exhalations from the bowels of the earth, where the temperature is uniform. Mineral exhalations cannot, therefore, be the cause commonly producing these diseases.

Exhalations from putrefying animal matter are said to have produced epidemic fevers. "Such have arisen after battles, when the bodies of the slain have been left unburied to rot on the field. This Galen mentions as one of the causes, and he is supported by the testimony of other authors; in particular by Forestus, who was an eye-witness to one thus produced. He also gives an account of the malignant fever's breaking out at Egmont in North Holland, by the putrefaction of a whale which had been left on the shore."* An epidemic fever is stated to have occurred at New London in Connecticut in 1798, from the putrefaction of a great number of codfish. This city is situated on elevated ground, with "scarcely any low lands about it." The heat of that summer exceeded, both in intensity and duration, any season in the knowledge of the oldest inhabitants. The average of forty-seven observations of a thermometer in the open air in a northern shade at different hours from twelve to five P.M., was within a very small fraction of 88°. The lowest mentioned was 78°, the highest 97°. It was also unusually dry and calm for five or six weeks in succession, with the exception of only a few nights.

It is stated that there was no unusual collection of filth to be found in any part of the town, excepting, in four or five stores, near together, and in the immediate vicinity of which

* Pringle, 320.

the disease originated and proved most fatal, where a great quantity of codfish was stored in bulk. In one store there were fifty quintals. This fish was cured far north, and an insufficient quantity of salt used: it was found early in August in a moist slimy state, and to save them they were spread out in the street, and on the wharves. They were so offensive, that several persons passing, were affected with nausea. From a quantity in the store of Mr. Jones, who fell a victim to the epidemic, a quantity of green and yellow matter ran upon the floor, like well digested pus.

There was also an exceedingly offensive privy near the stores, situated on the side of a hill; one part of the wall of which, was eight feet above the ground, so that the filth ran out between the apertures of the stones of the wall. Very filthy wharves and docks, and some low grounds, also contributed;* and although no unusual filth could be found, the heat was excessive enough to produce disease independently of the fish, though there can be no question that this greatly contributed.

There is also a remarkable instance of a pestilence at Narbonne in France, produced by an offensive gas which arose from putrefying animal matter in the well of a privy, belonging to an anatomical theatre, which had been the receptacle of the remains of human subjects. The well had been long closed, but on digging along the wall, the workmen struck on some of the stones, and on forcing them out, an offensive matter rushed out and suffocated them. The neighbouring people perceiving the putrid smell, went to the house, and of nine that entered, six died. The malignant effluvia pervaded the town, and a great many fell victims.†

These shew unquestionably, that exhalations from the putrefaction of animal matter, also produce epidemic fevers. Of this, however, there is a small proportion in the composition of the surface of marshes: as the gaseous fluids arising from animal matter, are in decomposition much the same with those arising from putrefying vegetables, they no doubt contribute to produce the effect. Some product of putrefying vegetable or animal matter is therefore the cause of the evil; hence the necessity of heat and moisture.

That this product is gaseous, would seem a necessary consequence of its origin, and of this we have abundant evidence. "Lancisius relates that thirty gentlemen and ladies of the first rank in Rome, having made an excursion upon a party of

* Pringle, 2. 402. 405. 472. † Med. Repos. 4. 245. By Dr. John Vaughan.

pleasure towards the mouth of the Tiber, the wind suddenly shifted, and blew from the south over the putrid marshes; when twenty-nine were immediately seized with a tertian fever, one only escaping."*

Lind, speaking of a settlement formed by the English on the island of Balan-bangan near Borneo, says, "For a few months these people continued in perfect health; but no sooner did the monsoon change, than sickness made its appearance, and it raged with such violence, that scarce one in ten survived this monsoon. The seasons of health and sickness are here regulated by the direction of the wind or monsoon; from October till April, during the north-east monsoon, the wind comes from the sea, and the settlement is perfectly healthy; but from April till October, during the south-west monsoon, the wind blows over the marshes, both of this island and of Borneo, and produces fevers of a most malignant nature, which frequently cut off even the stoutest men in twelve or fourteen hours."†

One of my friends managed, some years ago, some iron works. The mill-pond was long, narrow, and shallow towards the upper end. The stream ran in a north-west direction, and at the upper end of the pond, turned nearly at right angles, so that the direction of the pond was nearly north-west and south-east. The banks on each side of the pond were high, so as to form something of a ravine. There were several houses below the dam—one on one side of the pond at a little distance from it on the rising ground; one or two, a tannery, at the head of the pond in a direct line with its general course, and one a little higher up the stream, above the turn on the west side. The westerly winds are the prevailing winds in our summers. In the fall of a sickly year, the people in the house at the head of the pond almost all died; one in each of the houses on the sides of the pond, and none in the houses to windward of the pond, below the dam.

A number of similar facts might be produced which have occurred in my own knowledge, or that of my medical and other friends; others will be given in the prosecution of this inquiry, abundantly proving that this product of putrefying vegetable and animal matter drives with the wind, and is therefore gaseous.

It must also be dense, or it would arise high above the earth; authors mention facts which lead to the belief that the upper stories of houses out of the reach of these exha-

* Lind, p. 21. † p. 75.

lations, are more safe than the ground floor; and it is an observation long since, and very often made, that domestic animals, which breathe the air nearer to the surface of the earth than men do, are the first victims of pestilential air. A dense gas arising from putrefying vegetable and animal matter, is therefore the cause of these diseases.

It has been objected to this conclusion, that spots uniformly healthy, have suddenly become the contrary, during unusually dry weather; and that the same unfortunate change has, in other places, occurred during unusually wet weather; while other spots, usually so sickly as to induce all who are able, to abandon them during the fall, have been rendered healthy; some by one, and others, by the other of these extremes.

These are undoubted facts, but when investigated, the apparent exceptions are found to strengthen the doctrine.

Healthy spots have become sickly during a very dry season. A mill-pond, well filled, and exposing no marshy surface, has produced no injury for years. A very dry season, by bringing it into a marshy state, renders the neighbourhood sickly. Senac mentions an instance in which the bottom of a pond was brought into view in a different manner, but with the same result. "Near to the walls of a large city, stood a very extensive and deep pond of water, which for forty years had served as a receptacle of all the filth from the houses and streets.* As long as these putrid matters remained covered with water, they were productive of no mischief. But when they had so far accumulated as to rise above the surface of the water, a most malignant fever spread through the tract of country adjoining the city."†

The same cause produces effects precisely opposite in a change of circumstances. A marshy spot, which has heretofore rendered the neighbourhood sickly, may be dried up, and the consequence is health. On the 23d of July 1821, so great a quantity of rain fell in Fauquier county, Virginia, that about twenty mill-dams were broken in the course of the day and following night. The weather was afterwards very dry. In a short time, the mud left on the bottoms of the ponds was so dry, that a spade could be thrust down into the large cracks, which appeared to extend to the very bottom of the accumulated sediment. During the time these ponds were drying, bilious discharges by vomiting and purging, and also some most violent cases of bilious remittent, occurred among the workmen employed in rebuilding the dams, and the persons

* Dr. Hunter, Contagion, Cyclopedia. † Caldwell's translation, p. 20.

who lived near them. But after they became perfectly dry, it was universally observed, that we never had had the autumn so healthy. The same thing occurs on a larger scale every summer, in the hot countries of Egypt and Syria. The summer epidemics decline and cease in the hottest part of the year for want of moisture, the country being by that time an arid desert.*

On the contrary, wet weather will produce these different effects in a change of circumstances. An uniformly healthy country, hitherto dry from its high situation, in consequence of very wet weather becomes sickly; and marshes being by such rains covered effectually, the violent diseases usual in the neighbourhood cease.

The former of these cases was exemplified in the years 1804, 1821, and 1823, in the elevated country above and below the Blue Ridge. In these years, particularly in the first and last mentioned, the quantity of rain was unexampled in the memory of most persons; as was, also, the general prevalence and fatality of the autumnal fevers. The latter case was also illustrated by the occurrences of the same seasons of 1804, and 1823 in particular spots. Thus the low grounds of Potomac in Loudon county, were repeatedly deluged in the former year. That river rose to an unexampled height more than once in the course of the summer. These low grounds, thus kept more than usual under water, were the healthiest part of the country.

The following are instances of the same different effects of wet weather on a small scale. A gentleman living on the Ridge land between the Opequon and Shenandoah river informed me, that he had for nineteen years before 1823, scarce known what sickness, in his family, was. A neighbour had been in the habit, for many years, of watering his meadow by small rills from his mill race. Before this wet year, the quantity he could spare was very small, and not enough to make the ground wet, the moisture being absorbed immediately. This year, however, it was quite marshy, and the road through it was very bad. The consequence was, that a great number of persons died in the houses just around the meadows. Between Winchester and Charlestown in the valley of Virginia, is a remarkably large and deep spring, from which extends a low marshy piece of ground about a mile long, and perhaps one hundred yards wide. All around this marsh, the people have been annually subject to fevers in an unusual degree. In the

* Russel on the Plague.

very wet year 1823, however, the marsh being inundated, they almost entirely escaped. This circumstance is also exemplified by the measures adopted in Brabant and at Breda, and in a case in Holland mentioned by Sir John Pringle. In these instances, the inundation of the neighbouring marshes, put an end to the prevailing sickness. Thus we see that excessive heat will dry up the moisture in a marshy tract of country, and make it healthy; or make a marsh of a pond, formerly well filled, and so produce unusual sickness.

On the contrary, that excessive rain will fill a country hitherto dry and healthy with marshy spots, and produce fatal disease; or will cover from the action of the sun, extensive marshes, and prevent the evil which would otherwise have followed.

The more extensively we make our observations, the more closely we investigate the subject, the more certainly we shall find that this doctrine rests on the strong foundation of truth. It is, however, not a little surprising, that after the unrestrained spirit of inquiry, excited by the occurrence of the tremendous epidemics of the latter part of the eighteenth century, had convinced most of us, that autumnal diseases are produced by exhalations arising during the co-operation of heat and moisture on vegetable and animal matter, or the filth of the cities, that their minute variations should be attributed to an unknown constitution of the air. I shall endeavour to shew that the doctrine holds good throughout, and that the closer we examine the matter, the more clearly will the truth appear. The difficulty of the investigation is greatly increased by the strange neglect of the medical topography of the seats of epidemics, and of the variations of the weather preceding and during their prevalence. In the Medical Repository of New-York, in consequence of the unusual violence of the epidemics in most parts of the country, about the time of its commencement, and the novelty of the work, many accounts of diseases in various places appeared. From that work, much of the following is extracted.

The north, though less liable to severe epidemics, occasionally experiences them. In the hot summers from 1793 to 1799,* they particularly suffered. In a letter from Dr. Barker of Portland in Maine, to the editors of the work above mentioned,† he states, that in that neighbourhood, about the middle of August 1797, an epidemic fever and dysentery commenced, from the description, analogous to yellow fever, was

* See Med. Repos. vol. i. p. 141. † Vol. ii. p. 147.

very general, and was attended by considerable mortality. A considerable share of the bad cases occurred near together, on a low marshy piece of land. In the following year, 1798, the summer was unusually hot and sultry.* From the beginning of July to the last of February '99, an epidemic fever was very prevalent in several towns. In 1799, from July to November, general health prevailed. The summer season was rainy and cool.† In 1800 the weather was unusually hot and dry. The thermometer rose to 90° several days, and the sickness began in July. From the first of August to the middle of September, the cholera morbus was remarkably prevalent, and more malignant than it had ever been known.‡ In 1801, *August* was for the most part cool and rainy—*September* dry and sultry. The first cases which Dr. Barker attended, wearing any formidable aspect, occurred in the latter part of *August*. In *September*, malignant fevers occurred in different parts of the country near stagnant ponds of water.§

It is proper here to observe, that the continuance of the fever through the winter here mentioned, is not an objection to the doctrine of the dependence of these epidemics on heat and moisture co-operating on animal and vegetable matter. The number of cases attended by Dr. Barker, were, "in July six, in August sixteen, in September twenty-five, in October twenty-four, in November nine, in December eight, in January fifteen, in February six." Here we observe the disease, just as it does farther south, commenced in hot weather, increased and declined with it. The occurrence of some cases in winter, is what we frequently experience. In the fore-part of January 1823, in an uncommonly severe spell of weather, I had two cases of cholera infantum. Other forms of autumnal disease frequently occur.

Without, at this time, entering further into the subject of the cause of this extension of the symptoms of summer disease into winter months, I shall just observe, that the *internal change* produced by miasmata, which for the present I shall call the *predisposition*, often exists without being followed by fever. As many carry this predisposition throughout the fall, without having fever excited; so some continue to retain it in the winter, and on some sudden exposure to cold, which often produces it in the fall, fever is excited in those who continue in that state; or if the approach of cold weather be sudden and excessive, before the predisposition is done away, and proper provision made against the weather, the number affect-

* Med. Repos. vol. iii. p. 365. † Vol. iii. p. 367. ‡ Vol. v. p. 144.
§ Vol. vi. p. 18.

ed is greater. In the winter following those seasons in which miasmata abound, the number of persons remaining predisposed, and the predisposition itself, are greater. Sudden cold then produces many cases of combined symptoms of summer and winter disease. In confirmation of this, we find such winter cases or epidemics occur frequently far north, after summers particularly calculated to produce the predisposition to summer disease; as in the present case, and in the case of Bethlehem, Connecticut, to be presently mentioned; or in southern countries, where disease is common every year, on the occurrence of unusually cold weather; or, like the north, even in winters of ordinary severity, after autumns calculated to produce an uncommon degree of predisposition. This is furthermore confirmed by the fact, that these winter cases, in both north and south, particularly occur in situations calculated to produce the miasmata which are the cause of the predisposition mentioned.

The following cases illustrate this, as well as the general doctrine of the dependence of these winter epidemics, as well as those of the summer, on the predisposition produced by miasmata.

Bethlehem township, in Connecticut, is four or five miles square, and is ridged into hills running due north and south. There are six of these ridges, and in each valley there is a stream of water. The soil is very fertile. It was settled in 1730, and continued healthy till 1750. In 1748 a man built a dam across the central valley, in order to kill the timber on a piece of flat ground containing about fifty acres. The ground continued covered till the spring of 1750. The water was then let off, and was followed by a pestilence, which carried off a number of the most robust inhabitants.

As few of the physicians, and still fewer of the people, thought the ponded swamp the cause of the disease, ten years after what the old people call the first great sickness, the same low ground was again overflowed. After the letting out of the water in 1760, another wasting sickness began in the month of November, and carried off about forty inhabitants; this was called a malignant pleurisy.* From this, it appears, that as the cause in every epidemic falls short of producing the disease in numbers, though it produces in every one more or less predisposition, so it may fail of producing actual disease in any, but leave all predisposed. On reading this account, it struck me forcibly that the summer of 1750, must have

* Med. Repos. vol. i. p. 525. By Rev. A. Backus.

been hotter than that of 1760, and thus produced a greater effect; and on referring to Webster's history of pestilences, I find he states that the former year was uncommonly hot, the mercury in the thermometer had risen in Philadelphia to 100°.

"Bilious intermitting fevers are very prevalent during the autumn in the level countries near the sea coast of North Carolina. They also prevail near the rivers for some distance above the low lands." "Those intermitting fevers disappear as the cold weather sets in, but they are frequently succeeded by fevers of a different type, that are more fatal. Those fevers of the colder season, are commonly attended by symptoms of partial inflammation, whence they are denominated pleurisies of the *eye* or of the *head;* at other times they affect the *side*. In those several forms they are *equally* dangerous." "It commonly attacks people who have been afflicted by intermitting fevers during the summer and autumn. It appears *chiefly*, perhaps *only*, in those places where people are subject to intermitting fevers, in low sunken grounds, and along the banks of rivers. In the beginning of winter in the year 1792, that fever was very fatal in Martin county, near the river Roanoke; the river had lately been very low, and much of the muddy bottom and other grounds usually covered by water, had been exposed to the sun. The pain was then in the head. In the year 1794, ten or twelve men, the heads of families, adjoining one another, died of that complaint in December, on the river Neus. They had lived near the beginning of the high grounds on the north-east side of the river. There had been a dry season, and the winds were generally from the south-west. The other inhabitants of the adjacent country, except on that narrow strip by the river, enjoyed good health. In the year 1792, to the best of my recollection, in the beginning of winter, this pleurisy in the head as it was called, was endemic near Matamusket, in a settlement where the land is rich but very low, and much of it covered with water."*

An excellent paper by Dr. G. Pillson† gives the same views. Greenville is a small town on the south side of Tar river, built on a pleasant spot of considerable elevation, and nearly insulated by the river and two branches on the east and west sides of the town. The land on the north side of the river is low, broken by ponds, and subject to be overflowed during a fresh, which occurs five or six times a year, to such extent as to cover the low land half a mile from the banks. The miry state of the branches, in many places, render them dan-

* Med. Repos. vol. ii. p. 156. By H. Williamson, M.D.
† Ibid. vol. v. p. 137.

gerous to cattle. South of the town, and nearly a mile distant, is a mill-pond, the dam of which was broken during the summer, by which a considerable extent of its muddy bottom, &c. was exposed to a hot sun for nearly two months. The land between the town and this pond, is mostly under cultivation. July, August, September and October, were distinguished, as usual, by a prevalence of bilious fevers: however, I believe the fevers of this year were more particularly marked.

In February, March, and April, a fever proved very mortal in town and country. Some physicians called it bilious peripneumony. The attack was made by chill, or ague: before this was entirely worn off, a pain of the head, breast, side, or back, seized the patient, and frequently a concurrence of two or more. These increased in violence as the fever came on, and during its progress. The pain in the side was accompanied by a cough and expectoration of bloody matter.

From this, as well as from Dr. Williamson's account, it appears that the winter epidemic had all the symptoms of violent bilious fever, with the addition of pain in the side and bloody expectoration; but that these symptoms did not always appear. The treatment necessary to recovery, also shewed that disease was the same with that which prevailed in the summer, with the addition of the pleuritic symptoms in some or many of the cases. I have always found purging as necessary as it was before cold weather, and the evacuations of the same colour, consistence, &c.

It is not a valid objection to this doctrine, that the winter is but the continuance of a summer epidemic, and derived from miasmata; that many are taken sick who live on high places usually healthy. It is certain that the malaria is in some degree diffused very generally, and most persons, even in the healthier situations, are somewhat predisposed. I did not bleed a single person in the fall of 1823 for an indisposition of any kind, or however slight, in the town of Winchester, which was very healthy, whose blood did not resemble in blackness and consistence, the blood of those who suffered severe attacks of fever in the country.

The winter epidemic, then, although like the summer, is most prevalent in low places; because, there the two remote causes, cold and miasmata, co-operate in full force; yet it is found in high situations in greater proportion than the summer diseases; because, though one remote cause, miasmata, is there weak, the other one, cold, is as strong or stronger than in the low sheltered places.

There are two causes operating: the one confined for the

most part to low places, the other general. While the former operates alone, the sick are chiefly found in low places. When the latter begins, its action not being confined to low places, but extending with at least equal power to high situations, the proportion of the sick must be increased in them. If the power of miasmata in low places, be to the same in high situations as four to one, the number of sick in the former will be, to those in the latter, as four to one; and the predisposition, the effect of the power, will be the same. If the power of the other cause, cold, be represented by the number two, when it acts *on all alike*, the conjoint effect on the low places will be as six, and on the high as three. Thus, although a greater number are still sick in the low places, there is a greater proportion in the high.

The town of Hanover, in New Hampshire, is situated on the east bank of Connecticut river. On the east it borders on a low meadow, overflowed in the rainy season. The spring of 1798, was uncommonly late and wet. The summer was ushered in at once, and was as remarkably hot and dry. About the middle of June, several days were almost insupportable, and universally spoken of by the oldest men, as the hottest ever known. Under these circumstances of unusual heat in this town, heretofore remarkably healthy, a fever broke out in June, and affected great numbers of people in the following summer months.

There were some other circumstances besides the marsh on the east of the town. A dead cow, and several smaller animals were permitted to putrefy within fifty yards of the main street. About that distance from the cow, &c. were situated two houses in which the first cases appeared. A considerable parcel of potatoes, also, were allowed to remain in a putrefied state, within twenty feet of one of these houses, and less than forty from the main street. In this last mentioned house were nine persons; eight took the fever, seven were among the first cases. The one who escaped, left town before the fever made its appearance. These circumstances contributed, no doubt, to the general effect. But that, in consequence of the unusual heat, the marshy ground also shared largely in producing it, is evinced by the fact, that a number of the neighbouring towns, in the country about the Connecticut river, on its small streams, low grounds, &c. were likewise affected.*

Near Charlestown, Massachusetts, there is an extensive body

* Med. Repos. vol. iii. p. 5.

of marsh, at times overflowed. The account* states, that being salt, it does not injure the health of the inhabitants; but it is added, that bilious and hectic complaints are the prevailing diseases; and that scarce a year passes without the occurrence of several instances of malignant bilious fever in August, September, and October.

A part of the town of Sheffield, in Massachusetts, was from 1793 to 1797 the seat of epidemic disease. In 1796 particularly, almost the whole population were sick.

"That part of the town (township,) in which the sickness prevailed, is almost a perfect level. The river Housatonak, whose width is generally between thirty and forty yards, runs through it in a serpentine direction, and with a very gentle current. On each side of this river is a considerable extent of luxuriant meadow ground, much interspersed with coves or pools, which are left after the subsiding of the freshets, which occasionally overflow it, full of stagnant water. There are also several other streams which run through large tracts of flat and very marshy land. On one of these streams towards the north end of the town, (township) is a mill-pond which covers a large tract of land, but the water is so shallow that whenever a dry season occurs, a large part of the bottom of the pond is left exposed to the action of the sun. The fœtor which arises from this inundated land, when made bare by dry and hot weather, is extremely offensive to all who approach its borders. The inhabitants, at times, perceive the stench at the distance of half a mile; and persons passing near it, were affected with nausea and vomiting.

In 1796 the spring was backward and wet, and this wet weather continued till the end of June; so that the whole country was surcharged with water. From the beginning of July we very seldom had rain, and uniformly the weather was intensely hot, particularly in August. The pastures were parched almost to perfect dryness.

The epidemic commenced a little before the middle of July. Suppose a circle drawn around a point on the south-eastern side of this pond, of three miles in diameter. Without the supposed circle there were not, in that neighbourhood, ten sick families; nor were there within the circle, ten free from sickness. At least half of all the inhabitants of the circle were sick in the course of the fall, with bilious fever, or dysentery. The *eastern* part of this circle was the most populous, and the most sickly. Out of four hundred and fifty in-

* Med. Repos. vol. ii, p. 8.

habitants, two hundred and fifty at least, were sick. Of the one hundred and fifty who lived nearest the pond, not ten escaped. Of one hundred and fifty who lived *west* of the pond, about fifty were affected.

In the south part of the town there is also a pond; but in general the sickness near to it is inconsiderable. Even in 1796 there were but two or three deaths contiguous to it, but in 1794 the fever which prevailed was principally in the immediate neighbourhood of the south pond, while that in 1795, as is usually the case, was in the neighbourhood of the north pond.

The land overflowed by the south pond, it is well ascertained, is much more constantly and completely covered with water, than that overflowed by the north pond. But in the year 1794, the water of the former was drained off for the purpose of making repairs. I have stated this case at length, as it is a strong one, and occurred far north.*

The inhabitants of the flat country in the neighbourhood of Detroit, on which there is much stagnant water, are affected with bilious complaints every fall.†

In 1796 an epidemic fever excited considerable alarm in Boston. July and August of this year were intensely hot. The disease appeared on the 25th of August at the south-eastern part of the town, near a considerable extent of flats, daily exposed for some hours to the action of the sun. "A very great proportion of the sick were near extensive flats, particularly about the easterly, southerly, and westerly skirts of the town. The place called Oliver's dock, where this disease was most prevalent, was exposed to exhalations from foul substances lodged about the wharves and docks of that quarter, with buildings so constructed as to admit of very imperfect ventilation, and with large numbers of inhabitants crowded together in a small space." As the cool weather advanced, the mortality was greatly diminished. Dr. Warren had almost every fall seen a considerable number of cases similar to those of 1796, not excepting the black vomit, yellow skin, &c.‡

The yellow fever prevailed in Boston in 1798 also. The months of July, August, and part of September, were hot and sultry. Another account by Dr. Brown, which confirms this circumstance, says the weather was never known so uniformly and excessively hot.

The fever commenced on Stoddard's wharf, situated between Mill creek and Town dock. The dock is the receptacle of a

* Vol. i. p. 453. † Vol. i. p. 526. ‡ Med. Repos. vol. i. p. 136.

large sewer, into which the contents of the privies of the county jail, and the neighbouring houses are discharged. It is surrounded by warehouses which contained great numbers of raw hides, and a large quantity of beef not sufficiently salted. Being in the vicinity of Faneuil Hall market, all the putrid meat and decayed vegetables were thrown into it; and all the filth from a number of streets and squares flows into it. It is surrounded by fishmongers' stalls, and the offal of the fish, the putrid fish, oysters, and clams are thrown into it. Some few days previous to the commencement of the fever on this spot, a quantity of damaged salt and pickled fish was thrown into the creek at the back of the house in which the first cases appeared. During the summer, there was in town, an immense quantity of putrid fish and beef. These provisions were intended for exportation; but the depredations on our commerce by the French, prevented it. The fish and beef are at first only sufficiently salted to keep them through the winter. It is usual to repack them before exportation; but on account of the poor prospect, this was neglected, and great quantities of these articles spoiled.

The disease also appeared at the latter end of July, at the foot, and on the declivity of the south-east and south sides of Fort Hill, and made a fatal progress. Scarce any family that resided below the summit, on these sides of the hill, escaped the fever. One lost five persons out of six. At the margin of the river, on the south-east and south sides of the hill, there was stored a great quantity of salt fish, many half putrid raw hides, (Dr. Brown says twenty or thirty thousand,) and many barrels of beef. The first person who was taken sick on Fort Hill, had been conveying some of the putrid salt fish into the channel of the river. Another man who purchased some putrid hides, soon after removing them, had an attack of the fever and died. The south-east, south, and south-west winds prevailed most of the time of the sickness, which wafted the exhalations from the wharves, stores and docks at the foot of the hill, upon the inhabitants that resided on those sides of it.

In the last of September the wind shifted to the west and west north-west, which conveyed the noxious exhalations from the mill-pond into Back street. The inhabitants contiguous to the pond, and others throw dead dogs, cats, putrid meats, fish, and rotten vegetables into it, and drown many small animals there;* the filth of the streets flows into it in every direction, and it is the receiver of the vaults surrounding the pond. This

* See the case from Senac, p. 456.

pond was often drained of its water, so as to leave the mud and putrid substances exposed to the action of the sun.

During the prevalence of the south-east, south and south-west winds, the exhalations were blown from the town; but as soon as the wind changed to the west and north-west, their effects were fatally experienced by some families in Back street. One whole family, whose garden was washed by the waters of the pond, were attacked. When the fever appeared in this street, the select men were requested to order the water to be retained constantly in the pond; which being enforced, the fever soon ceased in that quarter.

This excellent account of the topography of the seat of the epidemic, and of the weather and winds during its prevalence, is given by Dr. Rand of Boston.*

New-York has been repeatedly afflicted by epidemic fevers. The yellow fever prevailed there in 1795. Near where it first began, there were several unfinished docks, which had been receptacles for several years of every kind of filth and dirt. By raising one of the streets, the proper drain from some of the grounds in the neighbourhood was prevented. The bilious fever had appeared in that quarter for several years successively;† in 1795 it spread more generally through the city, and "the extraordinary prevalence of heat and moisture in the air of the last year, (1795,) must still be recent in the memory of the inhabitants."‡ The account was written in 1796. In 1796 this part of the city had become more healthy, and the fever appeared in a part "hitherto reputed little liable to particular sickness."§ In investigating the causes of this change, a recourse to facts only, will afford a sufficient explanation. *First*, The docks spoken of in the south-eastern part of the city, which were in so loathsome a state, have been completed and generally covered with a sufficient quantity of good earth, gravel, or sand. The grounds have been drained, or rendered uniform with clean earth, and the wharves kept free from rubbish and filth.

Secondly. At the south-eastern part of the town, between the White Hall and Exchange slips, a new dock has been made from July 1795, to July 1796. As early as the month of April 1796, the stench which issued from this dock was highly offensive. On inquiry, Dr. Bailey found that the new ground was made chiefly of the dirt which had been accumulating in the streets during the winter; and that besides dogs, cats, hogs, two horses had been buried in the rubbish. About the

* Med. Repos. vol. ii. p. 446. † Vol. i. p. 128. ‡ Vol. i. p. 130.
§ Vol. i. p. 128.

middle of June the offensive smell from the new dock, &c. was very generally observed in that quarter of the city; and many complained of sick stomach and headach. The slips in the neighbourhood were also offensive, and had been so during the fever of 1795. In the latter part of June, the fever began to show itself about White Hall and the Exchange; but high winds, heavy rains, and much thunder and lightning, and cool weather occurred about the middle of July, and the disease was suspended. As soon as the weather became warm again, the fever returned.*

It appears further,† according to the health office records, that the yellow fever broke out in 1796 at White Hall, at the foot of Pine street, (then a very dirty place near the water), at Burling slip, and in the neighbourhood of Roosevelt sewer; in 1797, between Coenties and the Old slip, in Front street, at the Fly market in Fletcher street, at Burling slip in Water street, near Roosevelt sewer in George street, and at the foot of Pine street.

In 1798 the disease first appeared between Coenties and the Old slip in Front street, between the first and seventh of August. On the last mentioned day, twenty-three cases were reported; soon after which, the offensive lots were covered with "clean wholesome earth," and by the 26th, the disease had disappeared in that quarter. In this year, immense quantities of spoiled beef, fish, &c. were lying in New-York, retained for the reason given in the account of the fever in Boston and New-London. The fever appeared in several different parts of the city near the slips, sewers, or where the lots were low, in consequence of raising the streets, on the same day. On the 14th of August, in the morning, a very heavy rain fell without intermission from five till nine o'clock. A number of cellars were filled, particularly in the low parts of the city. Lispenard's meadow, which may be considered as within the limits of the city, was entirely overflowed, and the water did not pass off till a large drain was opened by order of the common council. After this rain, the mercury in the thermometer raised from 78°, in three or four days, to 90°.

From this period the disease became more general. Its violence was principally felt in Cliff street and its neighbourhood, in Water street, and on the unfinished grounds in the southern part of the city. The beef in the cellars between Burling and Beckman slips was so offensive to people passing, that complaints were made. The health officers directed the

* Vol. i. p. 128. By Dr. Bailey. † Vol. ii. p. 203.

beef to be examined, and that which was spoiled to be sent out of the city. Instead of this, the putrid pickle was poured into the gutters, and ran into Burling slip sewer.

The relative situation of this sewer and Cliff street is such, that the southerly and south-easterly winds force a current of air throughout the sewer, carrying with it the exhalations arising from the noxious matters collected there. On the 20th of August, the wind which had been at north-west, shifted round to the south-east, and continued to blow from that quarter for some time. In forty-eight hours after it began, there was scarcely a house in Pearl street, near where the spoiled provisions were stored, in the lower part of John street, and in Cliff street, which did not contain sick persons.

The greatest height of the mercury in the thermometer, in	1795	1796	1797	1798
was, in July, - - - -	83°	88°	90°	94°
in August, - - -	93°	89°	82°	96°

In this is strongly indicated the effect of high temperature in producing the yellow fever, when moisture and filth abound. The hottest year, 1798, was the most sickly; two thousand and eighty-six died. The year 1795, which in one month approached the temperature of that year, was next in sickliness.

At the south end of Seneca Lake in New-York, there is a valley, six miles long, and one wide, lying in the same direction with the lake. Three miles of this lake are, during the months of April and May, for the most part covered with water, in consequence of the lake being at its greatest height. As the waters of the lake subside, the very rich soil is left covered with aquatic plants and animals. At this spot, I. W. Watkins, Esq. who gives the account,* formed a settlement in 1795 with about twenty men. As the heat of the season increased, they successively grew sick. During the season this fever was very prevalent over that region, particularly in the neighbourhood of ponds and marshy grounds. It was called Lake fever, and produced an universal yellowness over the body. It has been less rife since that year, which was remarkably warm and sultry.

Port Elizabeth in New-Jersey, surrounded by low marshy grounds lying on muddy streams, and having a morass in a remarkably putrid state within one hundred and twenty paces of the house in which the first case occurred, was in the year 1798 afflicted with the yellow fever. There were only ninety-seven

* Med. Repos, vol. iii. p. 359.

inhabitants; thirteen cases of "genuine yellow fever" occurred, and six died. Along the course of Maurice river, a muddy stream, cases of the yellow fever made their appearance. These were in due proportion to the number of inhabitants; and in no instance did a case occur at any great distance from the water."*

Bald Eagle valley in Pennsylvania, is low and generally flat. Near to Bald Eagle creek, which runs through the valley, are many ponds of stagnant water. From the settlement of the valley, the ponds have continued full, and the inhabitants healthy, until 1797. The trees had been gradually cleared away; the ponds became filled with trees, rubbish, and putrid substances; and being exposed to the rays of the sun, became nearly dried up towards the latter end of summer, and sent out a very unpleasant smell. The consequence was, in the hot years 1797, '98, and '99, a fever which killed often in forty-eight hours, and having every symptom mentioned in the accounts of the yellow fever in Philadelphia and New-York. In the year 1797 it was as fatal in Milesborough, on Bald Eagle creek, according to the number of inhabitants, as it was in Philadelphia in 1793. A large pond of water stood near the town. The water formerly shaded by the trees, was now exposed to the sun, and the season being very dry and warm, was in a great measure dried up. The pond abounded with putrefying vegetables, and the stench was great; few in the town escaped sickness of the most malignant kind, which continued through August and September. The pond has since been drained off, and the inhabitants are as healthy as usual.

The year 1799 was very dry. The mercury in the thermometer stood often as high as 95°, and one day in the shade as high as 99°. This season the symptoms were much the same as in the two preceding, only more violent. "The black vomiting was characteristic."†

Many of the inhabitants of Galliopolis, a few miles below the mouth of the Great Kenhaway, in the year 1796, perished by yellow fever. The mortal cases were attended by the black vomit. In the town there was a number of small ponds and marshes.‡ There was, at the place, a cantonment of United States troops, and near the cantonment a large pond, which had been partly filled with trees, &c. When the fever first commenced, the garrison escaped, the inhabitants of the village suffering alone. While the former were congratulating them-

* Med. Repos. vol. iii. p. 250. † Ibid. vol. iv. p. 105. By Dr. Harris.
‡ Ibid. vol. iv. p. 73.

selves on their good fortune, the wind shifted and blew from the pond upon the cantonment; in five days, half the garrison were on the sick list; in ten, half of them were dead. A ditch was cut, the pond drained, and the whole surface covered with fresh earth. No more cases of yellow fever occurred, but cases of ordinary remittent and intermittent, until frost put an end to the fever in every shape.*

New Design, a village about fifteen miles from the Mississippi, stands on high ground, but is surrounded by ponds. In 1797 the yellow fever carried off fifty-seven out of two hundred inhabitants. Dr. Watkins, who gives the account, had seen yellow fever in Philadelphia.†

New-Orleans stands on the eastern shore of the Mississippi, and is situated below the level of the river. It stands on a soft and humid soil, and is surrounded by vast marshes. When the river falls in the summer, it always leaves a large space before the city, covered over with mud and putrefying animal and vegetable matter. The months of April, May and June, 1817, were very rainy; the country around the city remained for a long time covered with water.

A humid and stifling heat prevailed during July and August. About the end of June, the thermometer stood at 92°; in July it varied from 86° to 92°; in August from 84° to 94°; and towards the end of September from 80° to 85°.

A destructive fever commenced in July, and raged during that month and August. In the beginning of September a violent storm occurred, and the fever abated. On the 20th the south wind began to blow again, the heat became very intense, and the fever still raged with violence. In October it finally disappeared after a violent tempest.‡

In 1819 the yellow fever was more severe than in 1817. The former was wetter and hotter, as appears from the meteorological table kept at Natchez by W. Sergeant, Esq. Three thousand are said to have died.

At Mobile, in 1819, the fever was very fatal. It was supposed, that after the disease began, the population was reduced by the flight of the inhabitants to about five hundred. The total number of deaths from July 4th to December 1st, was two hundred and seventy-four. The survivors appointed a committee to examine into the causes of the fever. They reported that the wharves, which had been lately built of timber, had been filled up with rotten wood, bushes, shavings, and other

* Major Prior's account to Dr. Potter. Med. Record. vol. i. p. 527.
† Med. Repos. vol. iv. p. 73. By Dr. Watkins.
‡ Med. Record. vol. ii. p. 217. Par. M.M. Gros and Garardin.

vegetable matter, and covered lightly over with swamp mud; that Water street was filled up with the same kind of materials; and that the docks were clogged with timber, old boats, sea-weed, and other substances in a state of decay, particularly under the stores standing over the water.

There was incessantrain from the 28th July till the 11th of September, succeeded by a hot sun and drought for sixty-six days. During this time, the docks, and a large extent of marsh mud about them, were exposed to the heat of the sun. During the rainy time, the disease seemed to be confined to those about the river and wharves; but in a few days after the rain ceased, and the hot sun was left to act on the abundant sources of miasmata above enumerated, it spread rapidly through the whole town, and affected Creoles, inhabitants, and people of colour.*

The same fever prevailed at many places on the Mississippi, the Tombecbe, and the Alabama; the same wet spell of weather throughout August, and the hot sun and drought for sixty-six days afterwards, producing like effects in all the towns on those rivers, and in the interior country on their branches!

In all the sea-ports of the south, while bilious fevers prevail in the country around, as well as in the cities themselves, cases of yellow fever occur every year about the wharves. Abundant evidence of this is to be met with in the papers of the southern physicians on the subject. See particularly, Dr. Ramsay's account of the yellow fever at Charleston, South Carolina, in the New-York Medical Repository,† and Dr. De Rosset's account of the fever at Wilmington, North Carolina.‡

The situation of Wilmington is such as to "expose it much to the operation of marsh miasmata."§ The spring and early part of the year 1796, was remarkably wet. About the middle of the summer, the weather became dry and unusually warm. The bilious fever and dysentery prevailed, and great numbers died. In August, September and October, one hundred and fifty persons died out of one hundred and twenty or thirty families.

The eastern end of the state of Tennessee is a rough mountainous country, and is extremely healthy; intermittent and remittent fevers being rare, except on the large rivers. Part of the western end of the state adjacent to Kentucky, is equally broken, and enjoys an atmosphere not less salubrious.

The south-west of the state is level and fertile. Dispersed

* Med. Record. vol. iii. p. 212.
† Vol. iv. p. 207.
‡ Ibid. vol. iv. p. 318.
§ Ibid. vol. ii. p. 154.

over the country are numerous ponds, especially near the mountain. From the flatness of the surface, the waters run off slowly, and in some places stagnate. In the heat of summer, fevers, intermittent and remittent, sometimes of a very aggravated form, prevail.*

Natchez† is situated on the east bank of the Mississippi, in north latitude 33° 31′, one hundred and fifty feet above the surface of the river at low water. The shore forms a high precipice, which excludes the view of the river. The surface is very undulating, with a gradual, but irregular declivity for about three miles eastward to St. Catharine's creek. "It is sufficiently remote from any swamps on the same side of the river not to be affected by its exhalations. The soil is a rich black mould. Bilious fever was common in the summer and fall, of which occasionally there were a few cases of the highest grade, but previously to the year 1817, the inhabitants were not afflicted with an epidemic fever."

Soon after the termination of the war in 1815, there was a rapid increase of population. Many improvements were made, buildings erected, and arrangements made and partially executed, to reduce to a convenient level the irregular surface of the site of the town. By this means, ponds were formed in many parts of the town, and the natural course of the water being stopped, cellars in the low places were often filled, in part; the back yards of many houses were also thrown below the level of the street, and became the receptacle of much filth of every kind.

The year after the peace, 1816, was very dry. The next year, 1817, was wet and sickly. The year 1818 dry and healthy. The year 1819 wetter and more sickly than 1817. The following table, taken from the one given by Dr. Perlee, will place the whole in a clear light at one glance. The rain is stated in 225th parts of an inch.

	Rain in May till last of August, four months.	Mean temperature, June to September, four months.	Deaths.
1816	1961	79¼°	no epidemic.
1817	3285	77°	about 300.
1818	1919	76¾°	no epidemic.
1819	5862	77⅜°	number not mentioned; but stated to be the most sickly year ever known.

Of the rain which fell in the four months of 1819, very near four-fifths fell in July and August, and filled most of the cel-

* Philadelphia Journal, No. 3. p. 50. By Wm. Lee, M.D.
† Ibid. No. 5. p. 1. By A. Perlee, M.D.

lars, and all the low places of the town. The epidemic destroyed horses, cows, dogs, poultry, and the deer of the forest. At the subsidence of the flood, hundreds of acres along St. Catharine's creek, were covered with sediment from a few inches to several feet in depth, which afterwards becoming dry and cracking open, the putrefying substances underneath, emitted most offensive exhalations. Great sickness and mortality occurred all along the course of this creek.

Of the fever in 1817 it is observed, "on the 9th of November there occurred a severe frost, which at once arrested its progress;" of that in 1819, "it continued to prevail with little variation in violence till the middle of November, when the weather becoming cooler, it began to subside."

The yellow fever raged in Norfolk in 1800. The ground on which the city stands is a sort of peninsula. "The line which marks out the boundary of the town on the side next the river, comprehended originally more water than land on that side of the main street." In some places the wharves are advanced upwards of an hundred yards into the river, as far as this boundary line. That part of the city where the fever chiefly prevailed, stands entirely on made land, reclaimed by sinking log pens and filling them chiefly with green pine saplings, (small trees) which are slightly covered over with earth or gravel. In some places large openings are left for docks: in others, wharves are formed next the channel of the river, while the interior parts are covered with water. Through the whole of this wooden fabric, the water of the river penetrates. There are also some places left in their ancient state, and consequently have become equivalent to sunken places, and are the receptacles of all kinds of filth. "In these ponds, or rather sinks of putrefaction, though sixty yards or more from the river, the tide ebbs and flows through the open texture of the adjacent reclaimed ground." At low water they are not dry, but are the resort of hogs in hot weather. In addition to these circumstances, a short time before the fever commenced, a cargo of spoiled West India fruit was picked over, and the greater part thrown in a pile, and left till after the occurrence of some cases.

Rains had been very frequent in June and July; but instead of cooling the air, it was observed that they were invariably followed by more intense heat. For more than two months after the 25th of June, the inhabitants of Norfolk lived in an atmosphere heated above 85° of Fahrenheit, sometimes to 94° and 95°, but very frequently upwards of 90°. "Such a long tract of intensely hot weather, is not, we believe, within the re-

membrance of any person now living in this place." The fever appeared close to the above mentioned ponds. Two young men in a vendue store, at the spot where the oranges and limes lay, died among the first.

For several days in the last of July and first of August, the weather was cooler than before; there was a temporary suspension of the disease. The weather became steadily hot again about the sixth of August, and continued so throughout that month. The disease returned with the hot weather, and continued with unabated violence to the end of the month. On the 30th there was a considerable fall of rain, followed by three or four days of cool weather, with a brisk northerly wind. On the 4th of September, the thermometer stood at 60°. Attacks of the fever were less frequent: but this might partly be accounted for by the reduced number of persons liable to take the fever. About the middle of the month it again became sultry, and a number of young persons who had hitherto escaped were attacked. On the 5th October a deluge of rain fell, accompanied by a powerful wind from the north-east; the weather became suddenly cold, and in a few days not a vestige of the yellow fever was to be seen in Norfolk. The weather became hot again about the middle of the month, the thermometer standing at 80° in the shade. Several persons who had returned to the city, and some strangers, were attacked, and some fell victims to the fever.* This is a strong proof of the correspondence between the minute variations of the disease, and the varying state of the weather, and proper care would soon put us in possession of abundance of testimony to the same amount.

The fever again prevailed in 1801. The spring was extremely cold and late: frequent rains in June, and a cloudy sky, kept the weather cool. It varied from 70° to 87° till the last week, when the weather became serene and intensely hot, followed by occasional rains and a cloudy sky. This weather continued till the 23d of August. Diarrhœa and dysentery began to appear in June, and increased as the summer advanced. During the month of August, some cases of yellow fever were reported to have occurred about the wharves.

On the first of September, the weather became extremely hot, calm and serene. Not a cloud was to be seen for eleven days; during which time, the mercury in a thermometer fixed in a passage with a free circulation of air, in a part of the town well ventilated, and not crowded with houses, frequently rose

* New-York Med. Repos. vol. iv. p. 329. By Drs. Selden and Whitehead.

to 94°, and was seldom below 90° in the hottest part of the day. At 10 o'clock at night, during this time, it was found several times standing at 90°.

Under these circumstances, the "intestinal fever entirely disappeared;" and by the 7th or 9th of the month, the cases of yellow fever had become so numerous as to deserve the name of an epidemic, and to rouse public apprehension.*

"The lower part of this country, about Norfolk, is an uniform plain, intersected by rivers and creeks of tide water. The whole country is universally unhealthy. The inhabitants show the effects of a pernicious atmosphere. A thin sallow appearance is more common than we have ever observed in any other part of the world, even in the hottest climates; and they are commonly tormented with agues one half the year, and scarcely ever get clear of the appearance of them."†

This is more or less the case on all the rivers, creeks, and swamps of the lower country. These diseases are not however confined to it. In all parts, bilious diseases are common every summer near water-courses, marshes, mill-ponds, and in wet seasons at a distance from them.

It has been already stated that the wet years 1804, 1821, 1823, were uncommonly sickly throughout the upper country of Virginia, at least as far as I had an opportunity of seeing or hearing. The counties Fairfax, Loudoun, Fauquier, Prince William, and the valley of Virginia above the Blue Ridge, were exceedingly harassed by epidemic diseases in all of those years; particularly in the uncommon wet years 1804 and 1823. In the latter year it was a very common observation, that there had not been so general a sickness since, for nineteen years. The adjoining counties of Maryland,‡ and a part of Pennsylvania,§ were in like manner afflicted.

The year 1822 was exceedingly dry; the grass was burnt up; the corn bleached in many places in the field as effectually as it would have been by the cold of December. This year was remarkable for general health.

In the wet seasons, some places suffered remarkably. Dumfries in Prince William county, lies near an extensive marsh. In consequence of the great rains in 1821, it had many ponds in and about it. It was stated at the time, that only three persons escaped the fever. In the same year, although the upper part of Fauquier escaped so well, as above related, the lower part, on the large water-courses, and the flat tract

* New-York Med. Repos. vol. vi. p. 247. By Drs. Selden and Whitehead.
† Ibid. vol. v. p. 430. From Barnwell's physical investigations.
‡ Med. Record. vol. v. p. 459. § Ibid. vol. vi. 148.

called the marsh, suffered excessively. I saw in that year cases more violent than one which I was requested to visit, as a case of yellow fever, in Alexandria, and which terminated in death. In some instances the patient died in twenty-four or forty-eight hours. I visited one woman whom I immediately pronounced to be dying, at which the friends were somewhat startled, as she was then strong enough immediately after to get out of bed and take a chair, while my back was turned. She, however, died in less than an hour.

Though Fairfax county suffered very much, on the large water-courses particularly, Centreville, situated high and dry, as above related, escaped almost entirely.

There were some singular irregularities which must be mentioned, because they excited great attention, and were considered by some writers in the public papers, as insurmountable objections to the doctrine here advocated. Waterford, in Loudoun county, was sickly in every one of the three years. Shepherd's town, on the Potomac, was also. Harper's Ferry was sickly in 1821 and 1822, but healthy in 1823. The difficulty or objection vanished on examining the situation of these places. Waterford is situated on the east side of Ketrockton creek, partly on a low ridge running nearly parrallel with it, and partly on the flat between the ridge and the creek. This is a sluggish stream in that part of its course, running through a low flat piece of ground abounding with vegetation. There is a dam across it some distance above the town, and below the dam in summer time, the water is so low, that the bed of the stream is little more than a succession of ponds. Between the creek and the town, a very short distance, there is also a mill-race, itself very low in hot weather; and some ponds where brick have been made. Thus situated, Waterford is in wet seasons sickly, on account of the exhalations from the water standing on the whole surface of the low grounds; and in dry seasons, on account of those from the bed of the creek, the brick yards, and the race. The mill-pond may have some effcet also, in hot dry summers, as it lies south-west from the town.

Harper's Ferry is a village situated in the obtuse angle formed by the junction of the Potomac and Shenandoah, on a very narrow slip of land, perhaps fifty or sixty yards wide, between a high and steep hill or mountain, and the water. The latter part of the summer of 1821, it was above stated, was very dry. The bottom of the two rivers was exposed to the heat of the sun for a length of time; the water in a canal which supplies the public works was very low, and an attempt was most injudiciously made in this hot weather to clean it out.

Numbers of the men sickened in the very act. This place was also sickly in 1822 for the same reason. In this dry year the bottom of the rivers was more exposed, than in the year before. In the year 1823, however, Harper's Ferry was comparatively healthy, and it was observed that the rivers were fuller than they had been for some years. The rain which fell in 1821 was all or nearly all before the last of July. In 1823 it rained more generally throughout the summer.

Shepherd's town is situated on the Potomac also, and suffered in 1821 and 1822 with Harper's Ferry, and from the same cause, the exhalations proceeding from the bottom of the river. It differed however from that place in being very sickly in 1823 also.

This town stands on the bank of the Potomac, and through it, nearly at right angles with the course of the river, runs a small stream which supplies some mills in the town. Immediately back of the town, the ground through which this stream passes is low, and in wet weather marshy. Thus in dry hot summers the inhabitants suffer from the exhalations from the bottom of the river, and in wet years, from the adjoining marshy ground. The main street runs between the river and the low ground, is closely built, and remarkable for the small number of cross streets, and the few breaks in the row of buildings. In the wet year 1823, I have been informed by a friend residing there, that the people on the side of the street next the marshy ground, suffered very much, more than those on the other side.

In a part of the Blue Ridge it prevailed very much in the same year. It is cleared and cultivated in that part, nearly or quite to the top of the mountain. It lies east of the river Shenandoah and near to it. The exhalations from the marshy spots about that river, formed by numerous obstructions made in the bed, in order to throw the water to one side, and thus facilitate the boat navigation, are driven by the westerly, the most prevalent winds, immediately up the mountain. These obstructions are made with stone, and pass obliquely down the river, near to the opposite side; whereby the water is stopped above, and finds vent at the opening left for the passage of boats, but the lower side, in dry weather, of each of these embankments is a kind of marsh.

In Bruce town, Frederick county, Virginia, scarce one person escaped the fever in 1823. This village is situated on a small stream running through a country somewhat hilly. In the village, and immediately adjoining it, are several ponds which supply mills and factories. One of the ponds near the

centre of the town is nearly filled with mud, &c. and a part of every day, the bottom was, during the summer, exposed to view. Another of the ponds on the west side, in the midst of the sickness, broke repeatedly, in consequence of bad management.

In the midst of surrounding sickness, Winchester was free from disease. In the dry year 1822, it was also healthy. The body of the town stands on a remarkably level piece of ground, extending north and south nearly a mile between two hills, and up on the hill to the south. Through this flat runs a stream of limestone water, the bed of which is carefully regulated, and the sides walled up in some parts, so that no water is suffered to stand except at one place of very small extent, on the outer edge of the town. The water is chiefly supplied by a large spring, and is remarkably cool. It is conducted by pipes to every part of the flat, and to some parts of the high ground, and the streets have been so regulated, that it has free course through the gutters to the main stream in the centre of the town. By this means, at any time the gutters may be washed, which is frequently done, the water being so abundant, that the most lavish use of it is disregarded. The utmost care is taken to keep the gutters clean in the back streets, especially in warm weather, and the weeds, &c. cut up and thrown into the middle of the street, where the hot sun and passing waggons, &c. soon destroy them.

The city of Alexandria, in the district of Columbia, stands on sandy ground considerably above the level of the river. It has, however, a very swampy piece of ground above and below, and very near to it. From 1795 to 1800, it was difficult to wade through either of them, and the lower part of the southern swamp was impassable or nearly so, the Potomac river covering the greater part of it at high tides. It had, however, been protected in some measure from the water of that river and the adjoining creek by causeways, and had been drained by very large ditches, insomuch, that about 1800, it was inclosed and used as a grazing ground. A branch of the swamp at the upper end, formerly extended around what was then the back of the town, at a short distance west of the market-place. It is now dry, and streets or causeways are extended across it. The water that runs down through this hollow way, from a considerable extent of ground, passes through trunks placed at the bottom of the causeways. Great rains not having sufficient vent by these trunks, the water rises and forms a kind of pond for a short time, leaving, as it slowly

drains off, the filth, &c. brought down from above, spread over the surface of the low ground.

Behind the town at a very short distance, there is a considerable range of hills; between it and the town is a corresponding range of rather low ground. In wet weather, the whole was formerly miry and the resort of millions of plovers. The water from this ground vents itself by a small stream near West End, through a swampy piece of ground, into Hunting creek.

Thus situated, Alexandria in the year 1804 suffered with the rest of the country. The great rains of the fore part of the summer, and the hot sun of the latter part, produced a mortal sickness through the country above, and in the city the yellow fever raged. From that year till 1821, I have not a sufficient knowledge of the seasons to state any thing positively. The summers were, however, generally cooler than they had been through the whole continent,* and I do not recollect any remarkable season of sickness except the winter of 1814.

The year 1821 resembled 1804 in being wet in the fore part, and afterwards dry. With the whole country, Alexandria again suffered. The remittent and intermittent bilious fever prevailed throughout the country, and the yellow fever in Alexandria.

In the course of this fall I visited that city, and during the winter, some of the places which suffered remarkably. From inquiries and examination in Alexandria, I ascertained that the fever, with the exception of one spot, prevailed chiefly on the borders of the low ground above mentioned, near the market-house and the Hotel, and to the river along the wharves, some of which are unfinished; at the lower ferry, at the lower edge of the town, and at West End.

The spot above excepted was in the heart of the town; ten or fifteen persons died near the intersection of Fairfax and Prince streets. On inquiring into the causes of this singular mortality, I learned that a person living in one of the houses in Fairfax street, had had an old well cleaned out, and the filth was thrown into a narrow alley passing in the rear of the lot. In a short time the people who lived near, could not keep the windows open on account of the smell. Complaints were made, and orders given for its removal; it was done, however, in a very dilatory manner. The middle of this square is low, and many years ago, was often under water for a considerable time.

* See Med. Record. vol. i. p. 141. for a table of the temperature of the years from 1793 to 1817 in Philadelphia.

When I visited it, the smell continued to be very perceptible. In the house, from the yard of which the filth was thrown, there died three or four persons; in several adjoining houses, from one to three. In a house almost immediately opposite to the one first mentioned, two died; near it one; and at the south-west corner, at the intersection of the above named streets, two or three died; in all about twelve persons; among them were some of the worst cases, and every one but one, occurred within fifty or sixty yards of the mass of filth in the alley. In 1822 the city was, with the country in general, healthy. In 1823 the country was generally sickly, but the disease was not of a very high grade, as in the former years, in 1804 particularly. This is to be attributed to the superabundance of moisture, and to the rains continuing occasionally throughout the summer, and the weather not being as hot as in the former year. Abundance of moisture is known to be favourable to the intermittent form of fever, in every place where fevers are common, and they become more violent as marshes approach to a state of dryness. For this reason, many cases in the fall of 1823 assumed this form, and for the same reason, the cases which occurred in Alexandria in that fall, were not of so high a grade as those before noticed.

The city of Baltimore affords an excellent opportunity of contrasting the effects of soil and situation on the prevalence of epidemic fevers. Jones's Falls runs from north to south through the city, and empties into the Basin, an inlet of the river Patapsco. Towards the mouth of this stream, the land is flat, as it also is around the edge of the basin to its upper or west end. East of Jones's Falls, there extends along the water a considerable extent of flat moist ground, on which stands that part of Baltimore called Fell's Point. This was originally detached from the city, and took its name from being built on a point of land projecting into the river. Between the mouth of Jones's Falls and this point of land, there was a cove, and the shores, or the land between Baltimore city and the point, was, in 1798, quite marshy. This marshy land, and perhaps the space which the cove occupied, now filled up with all kinds of filth, shavings, &c. is covered with buildings.

This flat part of the city is the principal seat of the yellow fever, and cases of this terrible disease sometimes occur, and severe bilious fever, often when the other parts of the city, to the north-west, remain quite healthy. This part of the city is high and dry, and the soil gravelly. Dr. Potter, in his excellent memoir on contagion, says, "In 1797, no case of the yellow fever ever did originate in west Baltimore, above Hano-

ver street, beyond the sphere of exhalations from the docks, wharves, or made grounds. I defy the whole population of the city to produce a solitary exception."*

In 1819 the yellow fever appeared on the edge of the water, below the town two or three miles, for several weeks before a single case occurred in town. "In the year 1800, a malignant bilious or yellow fever prevailed in the lower part of Dorchester county, Maryland. This part of the county consists entirely of low land, with a large tract of swamps and marshes."† Dr. Potter also states the occurrence of cases of yellow fever in Carolina Forest, on the eastern shore of Maryland, in the year 1793; "after a spring unusually wet, and a summer as uncommonly hot."‡

The yellow fever prevailed in Wilmington, Delaware, also, in the year 1798. It is seated on a hill of one hundred and nine feet above the level of the tide. From east round to the west it is bounded by water, and on the west side of Christiana creek, situated on the west of the town, there is an extensive marsh which had been inundated till the spring of 1798, when it was drained. From the middle of July in this very hot year, the marsh became extremely offensive, one hundred acres of mud covered with dead fish and decaying vegetables, being exposed to the action of the sun. The most compact part of the town is on the south-western declivity; the prevalent winds being westerly, it would be impossible to devise a situation of things better calculated to give effect to exhalations.

In Christiana village and its neighbourhood, the disease also occurred. The first case was in the Welsh Tract swamps; the second, adjacent to an extensive marsh, three persons in succession died out of one house. In September, the disease was general and truly alarming. It appeared in Newcastle, and along the Delaware for some distance.§

During the autumn of 1820 and 1821,‖ an intermittent fever prevailed extensively along the river Schuylkill. In the summer of those two years, the water of that river was two feet lower than usual. Many pools were formed by sand bars, which ordinarily are covered, and much rotten wood and vegetable matter were exposed to the action of the sun. Great numbers of fish also died, and floating ashore, lodged on the

* Med. Record. vol. iii. p. 217. By Dr. Revere.
† Med. Repos. vol. v. p. 346. By Dr. John Mace.
‡ Memoir on Contagion, Med. Record. vol. i. p. 529.
§ Med. Repos. vol. iii. p. 369. By Dr. John Vaughan.
‖ Philadelphia Journal, p. 355. By Wm. Harris, M.D.

sand banks, and contributed to produce offensive exhalations. "I have often been surprised when crossing the river, to see the large quantities of dead fish, which were continually floating down."

The same disease also prevailed along the Susquehanna river in 1819. Dr. Harris was informed, that "on crossing the Susquehanna in the fall of that year, he was astonished to find it so much lower than he ever had seen it before. About one fourth of the stream was entirely stagnated by a sand bar, with the surface covered with river grass and a green glutinous mass; when the boat in passing over, distributed the grass and moss, there arose an almost insupportable stench, and I could discover that the water was literally filled with dead fish. I found nearly all my friends afflicted with the ague, and that out of seventy-three inhabitants residing at and near the ferry, only three had escaped!"

The city of Philadelphia has also suffered severely from pestilence. It has its offensive docks, its foul sewers, its filthy and confined alleys, and low places and ponds in its suburbs. Some idea may be formed of the evil that may spring from these sources, from the following extracts from a paper by Dr. Samuel Jackson.*

"Hodge's dock, gradually filling up at low water, is at present uncovered nearly its whole extent, and a large mass of mud, of animal and vegetable remains, are thus exposed to the action of the sun and air. Two culverts or tunnels into which empty the privies of the range of frame buildings on the north of the wharf, and those of some of the houses in Water street to the south of it, discharge their contents into the dock. On the wharf, south of the dock, there formerly stood a large frame building, which had been used for packing and storing hay, of which considerable quantities had fallen into the dock at different times, and when the store was burnt down about two years since, some hundred weight were thrown into the dock."†

Pegg's run is to be considered as an open culvert or common sewer, passing through the closely built parts of Penn township, Spring Garden, and the Northern Liberties, to the river Delaware. In its course it receives the contents of the gutters of the numerous populous streets and alleys it crosses, and two culverts from the city also open into it. Along its borders are situated a number of manufactories of glue, starch, dressed skins, and soap, about fifty slaughter houses, and the

* Philadelphia Journal, No. 2. † Ibid. p. 344.

privies of most of the adjoining dwellings, the refuse fermentable and putrescent matters of which, are all emptied into its stream. Excepting during heavy rains, or immediately after them, the stream is barely sufficient to carry along, with a sluggish current, the mass of decomposing offensive substances that compose it; for in fact it seems more like liquid mud than water. By the erection of a bridge across Pegg's run at New Market street, a stagnating pool was formed from two to three hundred feet in length, twelve to fifteen in width, and three in depth. These unquestionably are sources from which proceed pestiferous effluvia; but there are other circumstances in the situation of Philadelphia, which perhaps have been too much overlooked in considering the sources of the cause of the epidemics which have afflicted that city.

There is on its northern edge a large marshy run,* called Gunner's run—and on the southern border lies a marshy tract of land, called the Neck, lying between the rivers Delaware and Schuylkill, and extending from the city to their junction. That exhalations from these have considerable influence over the health of the city is manifest from the following considerations.

It appears from a passage in Rush,† that bilious fevers were for many years confined chiefly to Southwark, which lies next to the Neck. Some physicians mentioning, about the year 1778, the appearance of bilious remittents in the middle and northern parts of the city, "Dr. Clarkson, who began to practise in Southwark in 1760, said they had been long familiar to him, and that he had met with them every year since his settlement in Philadelphia. The cause of their more general diffusion appears from a passage in Caldwell's memoirs. An old and celebrated physician of Philadelphia informed the doctor that "previously to the revolutionary war, the city was surrounded from east to west by a range of forest timber, which protected it from the exhalations discharged by the marshes of the neck, and by the more distant shores of the Schuylkill. This timber fell a sacrifice to the rapacious hands of the British army, in the winter of 1778, since which time the city has been more generally pervaded by bilious fever than had been the case in former years."‡

It appears also that "in 1765 an intermittent fever was epidemic in Southwark;"§ "in the year 1780 the bilious fever prevailed as an epidemic in Southwark, and in Water and

* Rush, vol. iv. p. 3.
† Ibid. p. 230.
‡ Ibid. p. 138.
§ Ibid. p. 230.

Front streets, south of Market street." It is *remarkable* that Southwark was nearly the exclusive seat, not only of the bilious or break-bone fever of 1780, but of the intermitting fever of 1765 and of the yellow fever of 1805."* The yellow fever of 1797 was confined chiefly to the district of Southwark and the village of Kensington" (between which and the Northern Liberties flows Gunner's run) "for several weeks.† It also appeared early in Kensington in 1798,‡ and in the Northern Liberties, in 1802.§

On the one hand we cannot conceive of any thing better calculated to produce disease than the state of things at Pegg's run, and other places in 1820; and the consequence was, a mortal sickness, more so indeed than in 1793, the proportion of deaths being greater. If, however, a source so great produced only one hundred and twenty-three cases,‖ what possible state of things, in that respect, could produce four thousand *deaths*.

On the other hand, when we consider the position of "the marshes of the neck" south and south-west of the city; the prevalence of the south-west winds in summer, which Dr. Rush says "have blown upon the city of Philadelphia ever since 1793, more constantly than in former years,"¶ and which of course have driven the exhalations directly upon it; in connection with the fact, that in that part of the town next to the marshes, bilious diseases were common before they were known in the other parts, where they have made their appearance in consequence of the destruction of a wood which formerly sheltered them; and that it is still, in general, the first and sometimes exclusively effected by epidemics; the inference is irresistible, that the miasmata from this quarter are chiefly instrumental in producing these diseases.

The following table places in a strong point of view the dependence of the yellow fever upon the conjoint operation of heat and moisture on vegetable and animal matter, or the filth of cities.

The column of the temperature is taken from the Medical Recorder** by Mr. Cadwallader Evans; and also the number of deaths; the minutes of rain from Rush.

* Rush, vol. iv. p. 238. † Ibid. p. 4. ‡ Ibid. p. 40.
§ Ibid. p. 80. ‖ Jackson's account, Philad. Journal, No. 2.
¶ Rush, vol. iv. p. 113. ** p. 141.

1793	Before the first of Aug. Rainy.	After the first of Aug. Dry, particularly in Sept. and Oct.	Medium temperature June, July, August. 82° 2′	Deaths. 4000
1794	No account, and therefore presumed not remarkably wet or dry.	No account do.	79° 2′	A few deaths about dirty places and the ponds of suburbs. Rush
1795	Heavy rains last July	and first of August.	79° 2′	Some deaths in July, checked by the heavy rains which carried away bridges, buildings, &c. Rush.
1796	Rainy. May and June uncommonly wet.	Very dry.	79° 4′	Few cases. Rush.
1797	But little rain.	Rainy.	80° 7′	1000 or 1100. Rush. 1250. C. E.
1798	Very dry.	Dry.	81° 8′	3500.
1799	No account.	Very dry.	81°	1000.
1800	Very wet.	Unusual quantity 28th and 30th August.	77°	Some cases confined to one spot. Rush.
1801	Very dry.	Considerable quantity on 4th August.	77° 7′	Very few cases.
1802	Rather wet.	No account.	77° 2′	About 200.
1803	Rather dry.	Little mention.	79° 3′	Yellow fever slightly.
1804	Rainy.	No account.	74° 7′	Uncommonly healthy.
1805	Exceedingly dry.	Very dry.	79° 7	300 or 400.
1806 to 1817 12 years.	No account.	No account.	75 7′ of the whole	During a part of the time, unexampled health, especially in the cool summers 1814, 1815.*

* Philadelphia Journal, vol. i. p. 319.

These different years may be thus classed.

First class. The two years 1793 and 1798, in which the greatest mortality occurred, were the hottest.

Second class. The two years 1797 and 1799, in which the next greatest mortality occurred, were next in temperature.

Third class. The year 1805, was next in temperature and in mortality.

Fourth class. The years '94, '95, '96, and 1803, were very nearly alike in temperature, or rather the same; in all these years a few cases occurred, and most in 1803.

Fifth class. These years were very nearly alike, and about 2° less than the fourth class: and there were very few cases, except in 1802, when a considerable number occurred.

Sixth class. The year 1804, and the twelve years from 1806 to 1817, were the lowest in temperature, and far the most healthy.

The general correspondence of high temperature with great mortality, is here very striking. In order to explain the few deviations that occur, we must bear in mind the two sources of miasmata above mentioned; viz. the filth of the city, and the marshes in the neighbourhood, but chiefly in the neck.

It is evident that a higher temperature, as indicated by the thermometer in the shade, is necessary to produce the evolution of gas from the latter, than from the former; from a marsh, than from a pavement; the reverberation of heat from the stones, as well as from the neighbouring walls, making a difference of some degrees; and therefore that gas will be evolved from occasional sources, when the temperature, as indicated by the thermometer in the shade or within doors, is too low for its evolution from the low grounds around the city.

Hence it follows, that whenever occasional sources are suffered to exist, and the temperature is pretty high, sporadic cases will occur, before the low grounds are brought into operation. If the temperature continue to rise so as to produce miasmata from them, the disease will be general; and as, while it is ascending to the height necessary to produce miasmata from the latter, it will first arrive at that degree sufficient to produce them from the former; the disease always has the appearance of being produced by miasmata from these partial sources. Thus in July of every year from '93 to '99, sporadic cases occurred from occasional collections of filth, &c.; but in several of these years, the temperature rising two or three degrees higher than in the rest, the disease became general. In the first named year, the foul air from a cargo of putrid coffee, produced considerable effect; but that this was totally insuffi-

cient to cause the vast mortality that occurred, is evident, when we reflect on the limited extent of the effect of a similar cause in 1802, though so powerful that nearly all the persons affected in that neighbourhood died.*

As the sporadic cases must be proportioned in some degree to the magnitude of the sources existing in the city, it may happen that more cases will occur in a season, the medium temperature of which is somewhat less than another, in consequence of there being in the former, greater collections of filth. Thus in 1802, the temperature was two degrees lower than in 1803; but in the former year, the fever appeared in "a part of the city which had for many weeks before, been complained of by many people for emitting a fœtid smell, derived from a great quantity of filthy matters stagnating in that neighbourhood, and from the foul air discharged from a vessel called the Esperanza, which lay at Vine street wharf."† This was the spot above alluded to, where the miasmata were so concentrated, that nearly all the persons affected died.

From this it should follow that a general fever can only occur in those years in which the temperature is very high: but a partial fever may occur when the temperature is much lower, and will be governed by the circumstances of the spot in which it appears, as well as by the heat. A general fever must be in proportion to the heat and moisture; a partial one often will not be: these views are confirmed by the facts stated in the table.

In comparing the epidemics of '93 and '98, it will be found that the medium temperature of the months June, July and August of these years is nearly the same: that they were alike in dryness after the first of August, but differed materially in the fore part of the summer, the former being before the first of August very wet, and the latter very dry. "The mortality in 1798 was nearly as great as it was in 1793, and yet the number of people affected by it was four times as great in 1793, as it was in 1798; for in the latter year, the city was deserted by nearly all its inhabitants."‡ It was remarked that this epidemic (1798) resembled the yellow fever of the West Indies, much more than the fevers of '93 and '97."§ There is another circumstance which shows the violence of the epidemic of 1798. On the 29th of September, in that year, there was a frost which so checked the fever in every part of the city, as to induce many people to return from the country,‖

* Rush, vol. iv. p. 88. † Ibid. p. 78. ‡ Ibid. p. 50.
§ Ibid. p. 24. ‖ Ibid. p. 45.

though it afterwards revived. But in 1793 at the corresponding period the mortality was the greatest, more than one half of the whole number of deaths in that year having taken place after the 29th of September. The epidemic of '98 was therefore decidedly the most severe.

It follows from the circumstance that the marshes near the city were in a moist state, that dry weather is also favourable to the production of miasmata from them; for the sun had then greater opportunity of acting on the vegetable matter. This is supported by what occurs in every other year. Thus in comparing the years '97 and '99, we find these years nearly the same in temperature, and very much alike in the fore part as to rain; but differing after the first of August, very materially, '97 having been very rainy, and '99 very dry. The deaths however were nearly the same, although "in no year since the prevalence of the fever was the desertion of the city so general"* as in '99.

The same views are strikingly exemplified in the fever of 1805. The number of deaths was three or four hundred; very many more, in proportion to the temperature, than occurred in any of the years 1794, '95, '96 and 1803, in which the temperature was very nearly equal to what it was in 1805. But in this year the drought was so great that "the water in the Schuylkill was lower by three inches than it had been in the memory of a person of seventy years of age, who had lived constantly in sight of it,"† thus in a remarkable manner favouring the action of the sun on the low wet grounds. The fever prevailed chiefly in *Southwark*.

In all the years of the fourth class above mentioned, viz. '94, '95, '96 and 1803, the temperature approached very near to that degree which experience has shewn to be accompanied by an epidemic yellow fever; and the diseases also kept pace with it, being of an inflammatory and malignant cast,‡ and in the last year the yellow fever was general, in the city, though it did not affect great numbers.§ These years were all alike in temperature, and the three former very much alike in moisture, the year 1794 being considered as not remarkable in either respect; in '95 perhaps less rain had fallen than usual, till the last of July and first of August, when there were very heavy rains; and '96 was uncommonly wet before August, but very dry afterwards. Alike in heat and moisture, they were also

* Rush, vol. iv. p. 57.
† Ibid. p. 95.
‡ Ibid. vol. iii. p. 198, 241, 243.
§ Ibid. vol. iv. p. 84, 85.

alike in sickness. The year 1803 was rather more sickly; and that year, though like the rest of the class in temperature, was rather dry * in the fore part, and not wetter than common in the after part.

Sir Isaac Newton, in his Optics, says, "as in mathematics, so in natural philosophy, the investigation of difficult things by experiments and observations, and drawing general conclusions from them, and admitting no objections against the conclusions but such as are taken from experiment or other certain truths, is the best way of arguing which *the nature of things admits of*, and may be looked upon as so much the stronger, by how much the induction is more general."† Here then is one as extensive as can well be required. The cases are not picked; but every one that occurs in the first six volumes of the New-York Medical Repository, published during a succession of years, fruitful of epidemics in every part of this country, in which the author has taken care to give the medical topography of the seat of the epidemic, and the variations of the weather, immediately preceding and during its prevalence, and every one that has fallen under my own observation, is brought forward. Among the whole there is not a single case in which there was not the clearest evidence, of the presence of the known sources of miasmata. The whole in the most ample manner supports the doctrine, that epidemics of this country are caused by miasmata proceeding from animal and vegetable matter on which heat and moisture are co-operating; that the absence of either of the three is sufficient to prevent or put an end to the production of miasmata and their effects; and that the same result proceeds from such an excess of either of the agents, heat and moisture, as prevents the action of the other, excess of heat by evaporating entirely all moisture; or excess of moisture by covering over foul matter, so preventing the action of heat on them.

Other well known remote causes of fever always co-operate with this principal one, in the work of death. Excessive fatigue in attending sick friends and relatives, want of due supply of provisions or regular meals, grief and anxiety, apprehension of present danger, or of future destitution, and above all, the confined air of the small, filthy, unventilated habitations of the poor, combine, sometimes altogether, with the principal cause, to swell the number of the dead.

* Rush, vol. iv. p. 83.
† Helsham's Nat. Philos. preface, p. 5.

OF THE NATURE OF OUR AUTUMNAL EPIDEMICS.

Respecting the nature of these epidemics, two important questions immediately present themselves. Are they one? Are they contagious?

Epidemics vary exceedingly in violence and mortality. In some years most cases are intermittent; in others remittent. Few autumns occur in which either of these are exclusively observed. Though one predominates, some of the other fevers appear. Remittents may be rendered intermittent; and intermittents become remittent. These fevers have for these reasons been universally considered as one; varying solely in the *degree* of the diminished action that occurs at the close of every febrile paroxysm. Both intermittents and remittents vary in force, from an affection so slight as to be little regarded, to a degree of violence which procures them the name of malignant tertians and remittents; and these higher degrees of morbid action take place when those circumstances which give rise to the production of miasmata exist in greater force than common; viz. when the temperature of the atmosphere is higher, and moisture and filth more abundant.

The yellow fever appears in those places noted for the appearance of the ordinary bilious fever; and, we have fully shewn, is produced by the same cause, miasmata. It is more violent than the ordinary fever, and it appears only when the causes of the ordinary fever are present in great force. Before the cause has acquired that degree of force necessary to produce yellow fever, bilious fever is common. It gradually becomes more and more violent as the weather becomes more and more favourable to the production of the common cause. The nature of the fever becomes a subject of warm contention; some declaring it to be yellow fever, others asserting it is only the ordinary fever rendered more malignant by the increased heat of the weather. At length all admit the yellow fever to exist.

Even after this is universally admitted, at a little distance from the chief sources of the miasmata, even in the higher parts of the same city, cases of ordinary bilious fever are common. Nay, it is impossible to decide in the first hours of an attack, whether the disease is the ordinary bilious fever, or will turn out to be yellow fever; many cases of the latter ending in the former after a violent commencement; and many pronounced ordinary bilious fever terminating with all the symptoms of malignant yellow fever.

Not only do both exist at one time, under the operation of

one cause, in different parts of the same city: but of those in the very middle of the most sickly part, some have only the ordinary fever; and this is sometimes the case even with nurses who have attended some of the worst cases, and are carried sick from the bed-side of the dying.

Finally, throughout the whole course of the epidemic, warm disputes often occur respecting the nature of particular cases; plainly shewing the impossibility of drawing any intelligible distinction between them.

In the country, as in the cities, when the circumstances productive of the cause of bilious fever are in great force; the fever becomes malignant, and cases often occur not to be distinguished from the yellow fever.* Indeed I have seen cases in the country more malignant than such as have been shewn to me as yellow fever; death not unfrequently taking place in twenty-four or forty-eight hours from the attack; and there is no symptom of yellow fever that does not occasionally occur in the neighbourhood of marshes, ponds, and rivers. In fine, bad cases of bilious fever may, by mismanagement, be made to assume all the symptoms of yellow fever; and yellow fever, by judicious treatment, assumes, on the road to health, the symptoms of the ordinary bilious remittent.†

We have therefore as good reasons for believing that yellow and bilious fever are one, as that remittent and intermittent fevers are so.

Epidemic dysentery appears in the same circumstances of situation and weather as the autumnal fever; and the same argument, on which rests the certainty of the production of the latter by miasmata, is equally applicable to the production of the former.

The symptoms of dysentery are the same with those of autumnal fever, with the addition of tenesmus. This additional symptom sometimes comes on in the progress of a fever, and of course would be mistaken for dysentery by one who had seen it for the first time in that stage; sometimes it is quickly removed, in cases originally dysenteric, and from that time no person can distinguish the disease from the common autumnal fever by any existing symptom.

As, in most autumnal fevers, there are some nausea and griping, and in many there are also vomiting and purging, and as in these cases we do not consider the disease as dysentery; so, when the vomiting is so considerable as to acquire the charac-

* Striking instances, Med. Record. vol. i. p. 529, 30, 31. Potter's Memoir.
† Ibid. p. 537.

ter of cholera, it is not to be considered a different disease. These are but aggravated degrees of single symptoms, among many common to all these forms of the same disease; and it would be just as proper to make a different disease of the pain in the back or the head when they are particularly severe.

Tenesmus occasionally accompanies every grade of autumnal fever, from the mildest to the most malignant.*

The identity of the summer or autumnal, with the winter epidemic, pneumonia typhoides, has been already touched upon in discussing the question of the origin of our epidemics.† It plainly appears from the statements made by various physicians from north to south, that this is nothing more than a continuance of the summer epidemic. Every symptom existing in the latter is found in the former, the only difference being the additional symptom of pleuritic pain and expectoration. This symptom is sometimes produced by the first cold weather, in addition to those already existing, in persons then suffering an attack of the autumnal fever. Like dysentery, it occasionally occurs in the fall of the year, amidst other cases of autumnal fever. I had four cases in the fall of 1823.

We proceed to take another view of our autumnal fevers. In the first stage of every fever, the action of the heart is diminished. This is sooner or later followed by increased action, which after some hours for the most part (not to say always, though I have never known an exception) more or less moderates, or subsides; and this remission or intermission is again followed by increased action. A paroxysm of fever then consists of a cold and succeeding hot stage.

Epidemics vary exceedingly in the violence of these two stages. In some the chill is very severe and long continued; and the fever comparatively moderate. In others the former is almost unnoticed, while the latter is very severe. The shades of difference between these extremes are infinite in number, and if such difference constitute a difference in kind, the kinds of fever are infinite. In particular instances the depression has been so great that the system did not react, and the patient died in the cold fit. In others the increased action has been so great that death was produced in the midst of the hot fit by extravasation of blood from the vessels of the brain, &c. The cause which produces either peculiarity in individual instances is in some years sufficient to make it a common occurrence; just as the cause which sometimes produces single instances of yellow fever, is sometimes sufficient

* Potter's Memoir, Recorder, vol. i. p. 537. † p. 459.

to make it general. Thus we hear of epidemic apoplexies sometimes occurring, in the Campagna di Roma; Bruce records a similar disease in the African town of Sennaar;* more lately we hear of an epidemic disease in Virginia, which perhaps extended to other parts of the continent, in which multitudes died in the first chill.†

As, in the individual instances, no one would pretend to say that the disease was any thing more than an aggravated degree of one or other of the stages of the prevalent fever; so, when these cases became more numerous, it would be unphilosophical to assert that the epidemic differed in nature from the common epidemics arising in the same places at the same time of the year, and under similar circumstances of weather. Epidemics vary also in the degree of the action of the heart, when the cold stage is little remarkable in either. This variety has given rise to the distinction into inflammatory and typhous fevers. But that the nature of these fevers (confining our view at present to *our* epidemics which have acquired in common language the name typhous) is not different; that they are still one, appears from the following considerations. 1. All their various grades run into one another in such a manner that difference of opinion is continually arising respecting the nature of a given epidemic, insomuch that many medical men are cautious in giving a name until they have heard the opinion of their elder brethren, and the first that speaks out boldly generally settles the character of the disease in public estimation. 2. If difference of grade constitutes difference of fever, the kinds of fever are not two or three, but infinite in number. 3. The different forms do not only appear in different years, but in different parts of a city or country in the same year, and even in different persons of the family at the same moment; plainly shewing, that the difference arises out of the varying state of those exposed to the same cause, and is only in *degree*, not in *kind*.

If the different forms of epidemic disease, now of high action, requiring bleeding, &c.; then of low action, requiring stimulants, are different *fevers*, then are the distinct and confluent small-pox different diseases. There is as much difference in the type of puerperal fever, small-pox, measles, dysentery, cholera, as there is in bilious or yellow fever. As the confluent and distinct small-pox proceed from one cause, the mildest following inoculation with matter procured from a case the most malignant; so fever, of high and of low action, proceed

* Rees's Cyclopedia. † Med. Record. vol. v. 417. By J. R. Lucas, M.D.

from the operation of one cause, miasmata, on the system. And as mild and malignant small-pox are one disease; so are mild and malignant fever one.

The question next presenting itself is, are these epidemics contagious? Contagion is a matter produced by, and proceeding from a diseased body, capable on application to another, of producing in it the same disease, and of reproducing a similar contagious matter. This may be either fixed or volatile. The former can produce its appropriate effect only by contact, as in syphilis, vaccination, &c.; and the diseases thence arising must be limited, as it is easy to avoid contact. It is by a volatile contagion, if by any, that these diseases are propagated; and the whole tenor of the preventive means employed indicates it. It is such a contagion we have in view in the following observations.

It will not be improper here to observe, that it follows as a necessary consequence of the *origin* of these epidemics, that they are not contagious; or Sir Isaac Newton is wrong in his first rule of philosophizing; viz. that "more causes of natural things are not to be admitted, than are both true and sufficient to explain the phenomena."* Now the agent which we have shewn to be the cause of these diseases is not only sufficient to explain the phenomena observed, but the other agent, contagion, is *not;* Dr. Caldwell in his memoirs having well and truly observed, "that yellow fever will in two or three weeks overrun an extent of city which the small-pox will not pervade in twice as many months. To what cause," he continues, "can such a remarkable difference be owing? Certainly to this, that the small-pox is propagated only by contagion from the sick to the well, a source of disease which most persons have it in their power to avoid; while yellow fever is spread by a vitiated, or what I shall here term a malignant atmosphere, which being a common medium, has access to every one."† But as it has been strangely supposed or asserted that a disease, though originating or produced without the aid of contagion, may nevertheless be propagated by volatile contagion; we shall take up the the question on its own merits. When a person in good health is placed near one affected with morbid symptoms, and becomes affected in the same manner, the question arises, how was the disease produced in the second? In order to the solution, the first thing is to ascertain, if possible, the cause which produced it in the first. If it be discovered, and be also present when the exposure takes place, it is evi-

* Helsham's Nat. Philosophy, preface. † Memoirs, p. 100.

dent that the same cause which produced the first, produced also the second.

If with all our care we can discover no cause, and we find that in every change of circumstances, the morbid symptoms are the invariable consequence of being present with a person so affected, and that they never appear without such exposure, we are led to the supposition that the person in health is influenced by something passing invisibly from the sick, and this volatile influence we call contagion. The existence of volatile contagion is therefore a hypothesis resting for its credit on our inability in any better way to explain the phenomena observed.

If however we find the disease is not the invariable consequence of exposure; that it never follows, unless the exposure be made in certain circumstances in which it always makes its first appearance, and very often does not follow even then, we are destitute of the only ground on which the hypothesis of contagion rests; and have moreover strong ground for presuming that the cause does exist in these circumstances, though we be not able to discover it. If in this state of things we discover a cause, heretofore concealed by its invisible nature, capable of producing similar phenomena; if all the different circumstances in which these symptoms appear are such that this cause must be present, the question is at an end.

If a disease be propagated by a volatile contagion, the attendants must take it; for if they do not, we are destitute of the only ground on which the hypothesis of contagion rests. They must communicate it to their attendants, these to others, and so on until the disease become universal.

The only thing which prevents this result is a law of the system impressed on it by the Creator, with all others necessary to the continuance of the race of man. This law is, that the system is so little disposed to be affected by volatile contagion, that, except very rarely, it produces no effect on a second application or exposure. By means of attendants exempt from its action, in consequence of having previously suffered, the communication between the sick and those in health, who are still liable, is cut off, and the increase of the disease arrested. Without this restriction it would be not only universal, but perpetual. It is therefore absolutely necessary to the very existence of the human race, that the volatile contagion by which a mortal disease is propagated, be incapable, in general, of affecting the same person twice; the only possible mode of preventing the universal spread and

perpetual presence of such disease, being, to attend the sick by means of those who, having had it, are no longer susceptible of the action of the contagion. However weak a volatile contagion may be, if it be capable of producing sickness, the attendants of the sick must be affected; this, as we have before stated, being the only ground on which we can rely for believing it to exist. They will communicate it to others, and so on until it become, unless restricted as above to affecting the same individual but once, universal and perpetual, even though the disease be not mortal.

It has been asserted that there are volatile contagions which only act in certain circumstances; as in the presence of foul air or an impure atmosphere and of a certain temperature. The belief in the existence of a volatile contagion so limited, must rest on the same ground with those not limited. If it exist, it must, through the attendants, spread till it become, unless restricted as above, *universal and perpetual in those circumstances.* As there is however no such universal and perpetual disease, even with the limitation in the preceding paragraph, the necessary consequence is, that all the volatile contagions are so restricted in their operation that they cannot affect the same individual more than once. From this it follows directly, that no disease to which we are repeatedly liable is propagated by a volatile contagion.

It has however been denied that a volatile contagion, acting only in certain circumstances, as in foul air, must necessarily affect all in those circumstances. It is not, it is said, the mere presence of foul air or an impure atmosphere which gives effect to the contagion; that a change is to be effected in the body to prepare it for the action of the contagion; that until this be done the latter is inert; and if the system be able to resist the action of foul air, so that this change is not brought about, the person escapes.

It may be answered, this change must be a morbid one; foul air produces no other; and as a morbid change in the state of the system must be followed by morbid effects, there is *present* a cause for the morbid phenomena, the hypothesis of contagion loses its sole support, and falls to the ground. A disease therefore to which we are repeatedly liable, is not propagated by a volatile contagion. If a disease be propagated by a volatile contagion, it will spread till it become universal, unless it be stopped by insulating the sick by means of those who are not liable to it, in consequence of having had it. If a disease be propagated by a volatile contagion only in certain

circumstances, it will spread till all in those circumstances are affected, except it be stopped by insulating the sick by means of those, who having had it are not again liable to it.

Let us apply these principles to some of the diseases alleged to be propagated by a volatile contagion. We are not repeatedly liable to have the small-pox.

The small-pox spreads till all are affected, unless it be stopped by insulating the sick by means of those who, having had it, are not liable to have it again. But what are the facts on which rests the belief that this disease is propagated by a volatile contagion? When a person is placed very near another with the small-pox, the disease is produced in him; but except he be so exposed, he will never in any situation, or under any circumstances, receive it; unless indeed the matter from a pustule be brought and introduced into his system by inoculation, a case excluded from the present consideration; as our present inquiry concerns only diseases propagated by volatile contagion, such as the small-pox was before the introduction of inoculation, and now is when it happens to be communicated in the natural way to a people ignorant of the advantages of inoculation.

From these facts we infer that this disease is produced by a volatile contagion passing from the sick person to the well: the ground of our belief being, that the effect is produced by exposure to the sick without any other possible means of accounting for the phenomena; the disease never appearing without exposure, and never failing, in any circumstance of season or situation, to spread if exposure be not prevented. The yellow fever is the only form of our autumnal epidemics, now asserted to be contagious. Let us try the question on the above principles.

A person is liable to repeated attacks of this disease. Dr. Rush, speaking of the yellow fever of 1793, in Philadelphia, says, "Cases of re-infection were very common during the prevalence of this fever." In the year 1794, in which there was but little of the disease, he met with four cases, the subjects of which had had the fever in the year before.* Dr. Potter, in his excellent memoir on contagion, states that he has himself had this disease three times. Therefore this disease is not propagated by a volatile contagion. If the yellow fever were propagated by a volatile contagion, unless stopped by insulating the sick by means of attendants not liable to be attacked, in consequence of having once had the disease, it

* Rush, vol. iii. p. 217.

would become universal; and, if propagated by a contagion acting only in certain circumstances, unless stopped as above, it would continue to spread till all *in those circumstances were affected.* But it is not attempted to insulate the sick in this manner, there being no persons thus exempt, and the disease does not spread till all even in the circumstances favourable to it, are affected. Therefore it is not propagated by a volatile contagion. Numberless facts support this conclusion. 1. In persons placed near the sick, the disease is very often not produced; 2. It often is, and may at any time be produced by certain circumstances, without the presence of sick persons; 3. It never spreads in presence of the sick without the concurrence of these circumstances. * In persons placed near the sick the disease is very often not produced, even in circumstances favourable to the propagation of the disease. Some instances of this are mentioned in the third number of the Philadelphia Journal.† "The family of Hays (in which occurred the first case reported to the board of health) occupied a single room. It consisted of himself, wife, and three children, who all shared the same bed during his illness. The other tenants of the house, the neighbours, and his acquaintance, frequently visited him when sick, and a number of persons assembled at the house to attend his funeral. Not an individual thus exposed sickened." "A rigger contracted the disease at Walnut street wharf, sickened and died. Two families occupied the house, the individuals of which had to pass through where this man lay sick, in going in and out of the house. The neighbours also were frequently with him. No one took the disease from him, though the alley was at that time very filthy and offensive.

"Another man who took the disease at the same wharf had a family of ten persons. The alley in which he lived is narrow, confined, and filthy; the house small and close. No one of the family or neighbours, however, were affected.

"In the case of a lad, who lay in a garret with a single window, the disease displayed the worst features of malignity. Seven or eight persons were almost constantly employed in the room with him, and the night previous to his decease, some one of them was incessantly occupied in frictions of his body. No sickness appeared among them." There are as many more instances mentioned to the very same amount, in that paper.

In the fall of the year 1821, I visited Alexandria, purposely to see cases of yellow fever, and to inquire into the mode in

* Rush, vol. iii. p. 38. † Paper by Dr. Jackson.

which the disease originated. I made a minute examination of every part of the city, which from former perfect acquaintance with its situation, I supposed likely to be unhealthy, or which was pointed out as the peculiar seat of the disease; passing through narrow alleys, and looking into the cellar windows of warehouses in the midst of the habitations of the sick. In some of these places, the smell was very offensive. In company with Dr. Semmes, I visited a patient who had the black vomit, and afterwards died. During the last three days of her life, I saw her repeatedly every day, received her breath freely while examining her tongue, and listening to her indistinct muttering answers. There appeared to be no difficulty in getting nurses; and the last time I called, I found her dead, and several young ladies watching the corpse as usual. On asking them if they were not afraid, they replied, no, and were evidently under no concern as to danger.

From all this most unreserved exposure in the foulest parts of the town, for three days, I received not the least harm; although some circumstances connected with the visit, would have favoured an attack. These were hard and long continued riding backwards and forwards, part of the time in very hot weather, and part through heavy rains. Dr. Potter bound a piece of muslin, saturated with the perspiration of a man dying with yellow fever, around his head at bed time. Languid from excessive exercise, he fell into a profound sleep, and did not awake till next morning. He experienced no injury.*

2. This disease often is, and may at any time be produced by certain circumstances, without the presence of those affected with it. The memoir of Dr. Potter affords abundant evidence that it often appears in situations in which there is no possibility of its having been received from a sick person. "Mr. Volney, during his travels through the interior of our country, found the yellow fever in several places. Having seen it previously in our seaports, he could not have been deceived." "Mr. Ellicott in his journal," (of a voyage down the Ohio in November 1796) "is so explicit and intelligent on this subject, that no reasoning can shake his statement. His words are these: 'I arrived at Galliopolis at 11 o'clock in the morning. This village is a few miles below the great Kenhaway, on the west side of the Ohio river, situated on a high bank; it is inhabited by a number of miserable French families, many of which, this season, fell victims to the yellow fever. The mortal cases were generally attended with the black vomit.

* Med. Record. vol. i. p. 56. Potter's Memoir.

This disease certainly originated in the town, and in all probability, from the filthiness of the inhabitants, added to an unusual quantity of animal and vegetable putrefaction in a number of small ponds and marshes within the village. The fever could not have been taken from the Atlantic states, as my boat was the first that descended the river after the fall of the waters in the spring; neither could it have been carried from New-Orleans, as there is no communication at that season of the year, from the latter to the former of these places; moreover, the distance is so great, that a boat would not have time to ascend the river after the disorder appeared that year in New-Orleans, before the winter would set in.'" It will be remembered that the summer of 1796 was very hot.

Dr. Potter received a more detailed account of the same, from Major Prior of the United States army, who witnessed the rise and progress of the disease, which was a striking instance of its origin in marsh miasmata, and also of its identity with the ordinary bilious remittent. The substance of the account was as follows: There was near the village and the cantonment of the troops, a large pond. An attempt had been made two or three years before, to fill it up by felling a large number of trees that grew on and near its margin, and by covering the wood thus fallen with earth, but the intention had not been fulfilled. In August the weather was extremely hot, and uncommonly dry; the water had evaporated considerably, leaving an impure mixture of vegetable matter and water, which emitted a stench almost intolerable. The inhabitants of the village began to suffer first, and died rapidly. The garrison continued healthy for some days, and it was hoped that they would escape altogether. They were, however, soon undeceived, and the reason of the exemption in the commencement, was discovered. The wind had blown the air arising from the pond, *from the camp;* but as soon as it shifted to the reverse point, the soldiers began to sicken; in five days, half the garrison was on the sick list, and in ten, half of them were dead. The sick generally died with black vomit; they were often yellow before death, and almost always afterwards.

Nothing can possibly be plainer than that, in this case, a gas, dense enough to rest on the earth, and to be driven by the wind, carried death in whatever direction it was propelled. As some decisive measure became necessary to save the rest of the troops, a ditch was cut; what little water remained was conveyed off, and the whole surface covered with fresh earth. Not a man was seized with the worst form of the disease after the work was finished: and the sick were not a little benefited; for they

generally recovered, (though slowly), because the *fever became* a common remittent, or gradually assumed the intermitting form. Frost put a period to the fever in every form.

"The following fact published in the Medical Repository, and communicated by Dr. Watkins, is equally explicit as to the indigenous origin of yellow fever. 'At a village called New Design, fifteen miles from the Mississippi, and twenty from St. Louis, containing about forty houses, and two hundred inhabitants, in the summer and autumn of 1797, the yellow fever destroyed fifty-seven of the inhabitants, or more than one fourth. No person had arrived at this village from any part of the country where the disease had prevailed, for more than twelve months preceding its appearance.' Dr. Watkins resided in the village at the time, and having seen the disease in Philadelphia, testifies to the facts."

Dr. Potter also mentions some cases of yellow fever which occurred in a house near Baltimore in September, at a time when that city and the adjacent country were remarkably healthy. Struck with the circumstance, he examined the premises narrowly, and discovered that the cellar contained water which had remained there from the first week in June, the country having been then inundated with rain. The cellar being useless, was closed, and the only vent for the gas arising from it, was through the floor, which was open in several places. At his solicitation, the survivors were removed, and convalesced from that time. "But the tragedy did not end here. The owner of the house, anxious to retrieve its character, hired two men to empty the cellar." They ripped up the floor, and evacuated the cellar by means of a pump in one day. In a few days afterwards, they both sickened and died with the usual symptoms of yellow fever, hemorrhages, yellow skin, and petechiæ, and one with the black vomit.

The same writer says, during the embargo in 1808, "when no foreign sail whitened our waters, in August the yellow fever commenced its ravages at Fell's Point." The United States ship General Greene, sailed from Newport, Rhode Island, on the third of June 1799. At sea the yellow fever broke out. The fever did not exist at Newport before the ship sailed, and she touched no where, and had no communication with any vessel till she arrived at Havannah, after the breaking out of the disease.

"The Busbridge Indiamen, sailed from England for Madrass and Bengal on the 15th April 1792; on the 26th May, she crossed the line, in 27° west longitude. The mercury ranged from 80° to 86°. The weather was very sultry, with frequent

rains. In this state of things, the yellow fever broke out, although she touched at no port, nor had communication with any vessel."*

To this abundant evidence taken from Dr. Potter's memoir, it is needless to add any thing. Suffice it to say : if any dependence is to be placed in the description of yellow fever by the medical gentlemen of the cities, if any is to be placed in the decisions of the physicians of the country founded on these descriptions, and the occasional advantage of seeing for themselves on their visits to the seaports, fevers occasionally occur with the usual symptoms of yellow fever, including the black vomit, in situations in which it is impossible to believe the disease did not originate on the spot. For my own part, when in the fall of 1821 I visited Alexandria, and for the first time approached the bed-side of a patient in yellow fever, and reflected on the earnestness with which my family and friends had withstood my intention, representing it as involving a rash and unjustifiable risk of a life on which depended their comfort, I must acknowledge I felt alarmed ; the confidence with which I had always believed that the disease could not, from the evidence, be contagious, notwithstanding the fate of the unfortunate Italian physician in Havanna, supported me. In a few minutes I was perfectly at ease ; for, on beholding the patient and inquiring into the symptoms, I was confident that I was in no greater danger *from contagion*, than I had been before I arrived, *having left behind me, worse cases of the same kind.*

We have then unquestionable proof, that the yellow fever often is, and may at any time be produced in certain circumstances, (even at sea,) without the presence of those affected with it.

3. The yellow fever never spreads even in presence of the sick, without the concurrence of these circumstances. This position is fully established by numberless instances, in which, when the sick are brought out of situations favourable to the spread of the disease, into a pure air, the disease is not propagated ; no one in the pure air being affected by the presence of the sick. Experience has long since shown, that the disease, when carried from a city into the pure air of a neighbouring village, does not spread ; nay, that in the very city in which its fatal ravages have been felt, there are parts, into which if a sick person be carried, the disease will not extend itself. Dr. Potter, in the memoir above mentioned, challenges the whole population of Baltimore to produce a single instance

* Brice on yellow fever, quoted by Dr. Potter as above.

of the disease spreading, "in west Baltimore above Hanover street," from one of the hundreds and thousands of those who after breathing the pestiferous atmosphere in the lower parts of the town, and sickening there, were carried into the upper parts.

The event of the case of the General Greene is direct proof. "It became necessary in this disabled condition of the crew, to return to the United States, and on the 27th July the frigate arrived at Newport. She was subjected to an entire unlading; the sick with all their clothes were sent to the hospital. Mark the end of this disaster; neither the citizens (who could not be entirely excluded from intercourse with the crew) nor the attendants of the hospital contracted the disease." We find therefore that yellow fever does not possess the characteristics of a contagious disease: viz. that of effecting a person but once in their lives; and that of spreading till it become universal, unless stopped by insulating the sick.* It is often produced without the previous occurrence of that disease. 2. That in persons placed near the sick in circumstances favourable to its operation, the disease is very often not produced. 3. That it never spreads when the sick are removed out of those circumstances which are favourable to the propagation of the disease. But the ground of our belief in the propagation of a disease by volatile contagion being, that it is produced on exposure to the sick without any other possible means of accounting for the phenomena, and never produced without such exposure, we are here entirely destitute of it, and must conclude, that the yellow fever is not propagated by volatile contagion. Lastly, the cause being known; and all the different circumstances in which the disease appears, being such that this cause must be present, there can properly be no longer any question on the subject.†

In opposition to this mass of evidence, and to other powerful reasons that have been offered by various writers, the supporters of the opposite doctrine rest the argument chiefly, if not entirely, on the single fact, that where the disease once appears it is very apt to spread; many of the family being liable to be affected, and friends from a distance going to the assistance of the sick, apt to be seized. The following is an instance of this mode of reasoning, and of the reliance placed on such evidence.

"Since reading the above dissertation, I have seen Dr.

* p. 45. † p. 43.

Rand's observations on the same subject, in which he seems to think the fever was not contagious from the diseased. With due deference to the opinion of so good a man, I must beg leave to add the following cases in support of my former opinion: my brother hearing of my sickness, came twenty miles to my assistance, remained in my chamber almost continually for sixteen days, taking the sole care of me. About two weeks after his return he was attacked with the fever; no other person within three miles being affected.

"In Windsor, a Miss Bailey was very severely attacked, in the sickly part of the town, three miles from her father's: an elder sister came to her assistance, and nursed her until she recovered: then returning home she was herself attacked and died. Another sister who was her immediate nurse, and had seen no other person labouring under the disease, nor been in the infected part of the town, was also attacked and died."*

To say nothing of the weight of the negative testimony that many escape; and that no instance can be produced of a sick man, carried to a healthy neighbourhood, even in the high parts of the same city, spreading the disease; the validity of the conclusion will be tested by the following facts which occurred at Brucetown, in Frederick county, Virginia, in the fall of 1823.

Almost every individual in the town had an attack of the intermittent or remittent bilious fever, and several died. Mr. R. H. lay sick a considerable time before his death. Hearing of his illness, a friend rode eighty miles to his assistance. He attended him night and day for a week or ten days. He at length returned home, when the season was quite healthy, and soon after, within a few days, had a violent attack of bilious fever. As the servants in Mr. H.'s house at Brucetown were also sick, a white girl was hired. She arrived there perfectly well, and in two days was taken sick. She had a violent ague, which returned on the third day, and on the fourth she insisted on being carried away. Mrs. O. and all her family were sick. Four female relations in succession went, from a distance, to nurse the family. One after the other, they were taken sick and carried off. Mr. S. had a severe attack. A sister came to his assistance. He recovered. She went home, sickened and died.

It is evident from this that there is the same reason for believing that our common intermittents and remittents are con-

* Med. Repos. vol. iii. p. 8.

tagious, as for believing it of any form of autumnal disease, not excepting yellow fever. Indeed this opinion was entertained not very long since, by some of the faculty; but as the light kindled by the collision of adverse opinions has illuminated the medical mind so far, that they can discern between the propagation of an intermittent through a family in consequence of exposure to a common cause, and its spreading by contagion; it is to be hoped, that ere long all will perceive that as yellow fever originates, so also it spreads, from the operation of the same cause. Then shall our efforts be no longer spent in contending against an imaginary evil; but all concurring in one opinion direct their undivided exertions against the real source of mischief; and our cities and our country no longer be so terribly scourged.

Let not this hope be slighted as too sanguine. By careful attention to the numerous facts stated in the fore part of this essay concerning the medical topography of the various places mentioned, it will be seen that in almost, perhaps, every instance the evil might be remedied at less expense than a single removal of the inhabitants. Streets, sewers, &c. should be kept perfectly clean; marshes drained; and the evil will cease. If the marsh be too low to drain in the ordinary way, and too high to be kept covered with water, after carrying off as much as possible by ditches, &c. I have reason to believe that wells sunk in the lowest parts will be effectual. It remains to consider the characteristic symptoms of these diseases; and from them no less than from other previously mentioned considerations, arises a conviction of the unity of the whole.

Every one of the epidemic diseases mentioned in this essay commences with the symptoms constituting what is called the cold stage of a febrile paroxysm. This stage, excepting only those cases in which it is so violent as to terminate the existence of the patient, is followed by increased action of the heart, constituting the hot stage. The hot stage moderates more or less, or entirely subsides in a few hours. The remission or intermission is again followed by increased action. The cold stage varies from an affection so slight as scarcely to be noticed, to a commotion of the system so violent and so long continued as to be alarming, and even to terminate in death. The hot stage also varies from an affection slight and inconsiderable, to one which deranges the whole system, and terminates rapidly in death. The remission is sometimes so slight as to give room to doubt of its reality, and only to be detected by careful attention; at others so perfect that for

hours and even days, the patient flatters himself his disease is at an end. Every epidemic of this country, the yellow fever itself not excepted, has, occasionally, intermissions so perfect as to deceive the inexperienced. The parts principally affected in the autumnal fever, are the back, the head, the breast, and the epigastrium. The pain in the back is commonly most severe in the cold stage, and generally moderates as the fever advances. It is sometimes little noticed, at others excruciating.

The head is very generally, perhaps universally, disordered more or less. The pain varies from a slight uneasiness to an agonizing sensation. Pain and confusion of intellect, exist in every different grade, from that in which they are little regarded to one in which the patient is ungovernable or stupified. The external organs of sense are sometimes exceedingly alive to common or slight impressions; at others insensible to the strongest.

The breast is the seat of an insupportable oppression and load, accompanied with efforts to get rid of it by full inspiration, with anxiety for the result, or apprehension of immediate death.

The epigastrium is the seat of tenderness from a degree so slight as not to be noticed by the patient till pressure be made, to an intolerable soreness and burning, accompanied by fruitless efforts to vomit. The matters discharged from the stomach and bowels are of various colours; yellow of every different shade; green from the slightest shade to one so deep as only to be distinguished from black by dilution or smearing the matter over white paper or cloth; and black, not altered by dilution, and having no other appearance, under any management, than a black sediment intimately mixed with a fluid like coffee grounds or the diluted black mud of a sulphur spring. Sometimes the matter discharged has every appearance of blood with the colour changed, from that peculiar to it, however black, to a muddy black nearly allied to the last described; and sometimes is manifestly black and fluid blood which does not coagulate.

The urine is of various colours, from a deep bright yellow to a black, precisely such as is seen when dark coloured fæces have long remained in a vessel of urine. In mortal cases this black urine has been in so small quantity as almost to amount to a cessation of the secretion. The colour of the skin varies from a slight sallow, to a deep dark yellow, resembling the colour of a side of soal-leather.

The blood is universally black. This is a circumstance to

which I have long paid close attention, and the shade increases in proportion to the violence of the epidemic. This is so universally the case, that in the fall of 1823 a man of consumptive habit having a sudden hemorrhage from the lungs, I was much surprised to find it black; precisely like what was usually seen at that time in blood drawn from the arm. I could not at first avoid suspecting the hemorrhage was from the stomach, the colour being such as is common in hæmatemesis; but after the discharge moderated, the matter expectorated by coughing was, in various proportion at different times, intimately mixed with blood as black as at first. This colour of the blood occurred in the yellow fever at Boston; being of "a dark purplish colour similar to the blood of drowned or suffocated persons."*

These various symptoms have occurred in all the different epidemics I have witnessed for twenty years back.

Two of the forms have each an additional symptom; dysentery has tenesmus, and the winter epidemic pleuritic pain and expectoration. These symptoms however do not exclusively belong to the cases which have appropriated those names; some griping and tenesmus occurring frequently in autumnal fever of any grade, as well as some pain and bloody expectoration, the latter constituting in fact sporadic cases of the winter epidemic. Four cases of this kind occurred to me in the fall of 1823.

TREATMENT.

The limits of this essay do not allow of more than a comprehensive view of this part of the subject.

In the cold stage it is proper to make use of moderate stimulants, as warm applications to the extremities, and particularly to the epigastrium,† and hot drinks. Extraordinary efforts become necessary. Dr. Lucas of Brunswick, Virginia, in a valuable paper on the treatment of the epidemics of 1818–22,‡ has shewn that much may be done in the lowest state, in the commencement of an attack, when all hopes are abandoned. Similar cases, treated with similar success, occurred in the fall of 1821, in Fairfax county and in Alexandria.

The increased action in the hot fit is sometimes so violent as to produce extravasation of blood within the cranium. Bleeding from the nose is a frequent occurrence, and often affords relief. In these cases it is often necessary to take blood

* Med. Rep. vol. ii. p. 573.
† Currie's Reports.
‡ Med. Record. vol. 5. p. 417.

to obviate immediate danger; and is always advisable to prevent the prostration of the system which follows excessive action of the heart and arteries. It should be carried to the extent of making a sensible impression on the colour of the countenance or on the pulse; and should be repeated, without regard to length or rather shortness of interval or quantity drawn, so as to ensure the effect desired, the reduction of the violent action of the heart. In cases in which the pulse is not so strong, but still more so than natural, bleeding is often highly advisable, when, however, it may be, and is dispensed with. It favours the operation of cathartic medicines and cuts short a degree of increased action, in a few minutes, which may not, with certainty, be accomplished in hours or days by any other means. In cases in which the action of the pulse is moderate, or even smaller than common, bleeding is often highly beneficial; particularly when the head or bowels are violently affected with pain; or the lungs greatly oppressed. In these cases the patient is generally pale, and there is some doubt of the safety of taking blood, but if the patient can bear the loss without the pulse sinking, he will be greatly relieved.

If the attack be sudden, and the strength not wasted; if the pulse, though small and not strong, be somewhat slow and regular and be not varied by any position of the patient, bleeding may be tried. If the pulse, which ought to be felt the whole time, do not fail at all, the bleeding may be continued. In such a case the pulse frequently, after a short time, increases in force, sometimes even during the bleeding.

A lady with intense pain in the head, pale cool skin, a weak pulse, desired to be bled. Fearing to venture, I advised a cathartic; it operated five or six times, but the pain continued. She was bled at night, though much in the same state as in the morning, with considerable relief. Some time after she was attacked again in the same way. The pain severe, skin pale and cool, pulse weak, but regular and slow, and not altered by sitting or lying. An orifice was opened immediately in the arm, and about a pint was taken, the pulse not lowering; on taking off the ligature it was difficult to stop the blood. She was out in a day or two.

A medical friend had had the most violent chills and fever for some time, in the fall of 1823, but had greatly neglected himself, the demand for physicians being so great, that though sick they were compelled to ride, being arrested by the ague sometimes at the house of a patient, sometimes on the road, and compelled to lay by under a fence till it wore off. He one day arrived at home entirely unable to give any account of

himself. He continued for some time to have the most violent agues. In one of them, lying on his bed, he apprehended nothing less than death, if not relieved from the intolerable "sense of fulness and distention, such as to create pain in the neighborhood of the heart, lungs and stomach, and frequent palpitation and occasional cessation of action of the heart for a pulse or two," and knowing, as he said, that no physician would bleed him in that state, he would not send for one, but sent for a friend, who took two pounds of blood with such relief that in a very little time he drew upwards of a pound more. The ague was after this more moderate, and he several times missed it without having taken any medicine. It assumed the tertian form, and returned slightly the next day irregularly. On the day of the expected paroxysm he had none. On the fourth day, which was the day of the interval, he took not the precautions he had lately used of keeping himself warm in bed, and using warm applications to the feet, he accordingly had a severe paroxysm; after which it did not return till that day week. On the 11th and 13th the ague returned. On the fifteenth day the symptoms of oppression became intolerable. He "panted like an animal that had been chased." In this situation, the ague apparently approaching, he had three pints of blood at least taken, which so relieved him that he soon got out of bed. He had no chill whatever, but a fever as usual. Some days after, being somewhat distressed at the time the disease should return, he lost a quart of blood, and arrested it, and had no chill till the eleventh day after, and then a slight one.

This remarkable case shews plainly that we might often bleed with advantage when we do not. In ague there is an immense load of blood in the interior vessels. In a similar state in some diseases, as in asthma, bleeding is practised with advantage; and I have no doubt that it might often be used advantageously when the head, the breast, &c. are greatly oppressed on the approach of ague, when the pulse is as described in the case first stated.

In some instances, when the pulse is so low as to make bleeding hazardous, but we know that the important parts above mentioned are oppressed, the pulse may be roused sufficiently to admit of bleeding, by the warm bath, or by emetics. I was called about day-light to a lady with intense pain in the head, but very weak pulse. Bleeding seemed to be out of the question, yet desirable. I gave an emetic to rouse the pulse. After the operation, the head still aching severely, but the pulse better, I bled with some relief; several cathar-

tics were given in the course of the day, but they did not operate well. In a few hours after the first bleeding the pulse had raised, and the head still aching, I bled again. At night the pulse was considerable, and the affection of the head not entirely removed, more blood was taken. The last time there was some objection made, and after a pint had been taken, it was insisted that the arm should be tied up. After the bandage was taken off, the arm continued to bleed as freely as before; which, I observed to the bystanders, evinced fulness of blood, and that she could bear the loss of more, and rendered it probable that the arm would bleed in the night. It did so, and the next morning I found her quite relieved.

The above observations are as applicable to bleeding in cases in which the bowels are much pained, as in those in which the head is affected.

There is one result of bleeding which must not be overlooked. I have often known persons, children as well as adults, have an evacuation from the bowels immediately on tying up the arm. In the case first above mentioned, after the bleeding, it occurred in a remarkable degree. A cathartic had been given in the morning, operated well and ceased some hours, when the bleeding was performed. In two hours after I was called out of bed, found the patient deadly sick and purging freely. It continued till some time next day. In the last case, before the arm was well tied up I had to leave the room. There was however no evacuation, the disposition only being excited; but there is no doubt in my mind if the bleeding had been carried a very little farther, as I wished, that purging would have been the consequence.

In a case in 1823, long continued constipation of the bowels was so great that treble doses of active medicines were constantly necessary. In one case a hemorrhage unexpectedly took place from the mouth to such extent that the patient sunk down, we thought into the arms of death. She was left quiet, however, and in a little while the pulse began to beat again; she lay some hours and very gradually recovered. After this hemorrhage the bowels were so easily moved that no medicine was taken, a common injection procuring an abundant passage or two every day. I therefore look upon bleeding as a very efficient means of purging in extreme cases.

Emetics are sometimes useful in the commencement, merely as an evacuant. They discharge a quantity of bilious matter, which from the position and shape of the stomach, would otherwise be retained for many days, exciting dreadful nausea. They are also frequently useful in another way. Given in the

forming state of fever, in the approach of the cold fit they often prevent it. A caution is however absolutely necessary respecting the administration of these energetic medicines. Though safe and useful in common fevers, in seasons in which the cause is abundant and active, producing extensive sickness, the stomach is often so irritable that the vomiting cannot be stopped. In 1804 and 1823 many lives were lost manifestly from the violence of their operation.

Cathartics, when the action of the heart is not great enough to require venesection, are the main dependence for evacuation; and when the loss of blood is necessary they are second in importance to it alone. They have been generally considered as useful in proportion to the quantity of the discharges. With this view alone any cathartic will answer the purpose; and it is pretty generally considered that, excepting calomel alone, one is nearly as good as another.

It cannot however have escaped the attention of men of observation, that free purging sometimes gives little or no relief; that notwithstanding the most active employment of cathartics, the patient gradually sinks into stupor, with eyes suffused, &c.; nor has it escaped their observation, that in those cases in which cathartics seemed useless or even injurious, the discharges are serous; consisting, after the subsiding of a small quantity of grosser matter, of a transparent fluid; and that all the unfavourable symptoms are mitigated at once on effecting a consistent and high coloured discharge. It has long been observed that such a discharge is salutary. Great numbers every year are kept from illness by a spontaneous catharsis of this kind; and there is ample reason for believing, that, when it is not spontaneous, exciting it by proper medicines will prevent any serious attack.

It was very natural for physicians practising among a people liable to these attacks, and observing the benefit arising from spontaneous discharges of bilious or other dark coloured matter, to endeavour to obtain the same advantage from evacuations of the same kind artificially produced. Accordingly we find active cathartics were used by the ancient physicians of Greece and Rome; and although the prejudice of an English or Scottish education was opposed to the use of these remedies, the physicians of this country long since discovered that such cathartics as evacuate the dark matter above mentioned are the main dependence in our autumnal epidemics.

As long ago as the commencement of our revolutionary war, the physicians of the more southern states had made this

observation. This fact I learned from my father, who at that time practised in Charleston, South Carolina. He was then young, and probably was taught it by his predecessors. We know from Dr. Rush, that, when at a stand how to relieve the yellow fever of 1793, a manuscript account of a similar fever in 1740 by Dr. Mitchell, of Virginia, acquainted him with the proper mode of treating it. The same writer also states that purging was the principal reliance of Dr. Clarkson in the treatment of the bilious fever common in Southwark. He practised in that quarter of Philadelphia as long ago as 1761.

Without entering here on the cause of the superior advantages arising from evacuations of this nature, suffice it to say experience has decided the matter. From much observation and many experiments, I consider the medicines in common use as standing in the following order, in reference to their fitness to effect this object; the most effectual being first mentioned: viz. Calomel, Aloes, Rhubarb, Jalap, Scammony, Colocynth, Senna, Calcined Magnesia. Salts of all kinds, oil and Gamboge are little adapted to this end. In some cases, either of the three will in a degree answer the purpose; but in general, particularly after free purging has been once or twice effected, oil only discharges what may happen to be in the intestinal canal; and gamboge and salts produce an immense watery discharge, at first coloured by the contents of the bowels, but if continued, transparent. Calomel is slow in operating, often requiring twelve hours: it does not operate frequently, but the discharges are large. It gripes little or none in general, and is the most effectual medicine known in producing consistent viscid discharges of various colours. Its action is more durable than that produced by other cathartics, accordingly it has been long observed that calomel prevents the constipation which follows other medicines. Aloes resembles calomel in its operation more than any other vegetable cathartic. From experiments, which for want of room cannot be here detailed, I am convinced it is the best substitute for calomel, with reference to the above object. It resembles it in being slow, in not operating more than once or twice freely, in griping very little *in general;* and to it also is justly attributed the property of a durable action on the bowels.

Rhubarb is next to aloes in these properties. In doses of five or ten grains it acts very much as the latter; but it is not quite so certain, durable, or effectual in bringing away tenacious or consistent discharges. In large doses it operates more freely than aloes, and is therefore better adapted to the

first stages of fever, in which free evacuations are desirable. Jalap in small doses is less certain than Rhubarb. In large, it is more active, the discharges being larger and more liquid, but still of a cast decidedly bilious. Its action is quicker and less durable. Scammony is more active than Jalap, but much like it in its mode of operation; the chief difference being that the dose is about one half the weight and does not nauseate much. In consequence of the great complaints made of the nausea excited by jalap, I made a trial with the scammony, found it an admirable substitute: and have for many years made great use of it. It is so mild in its operation and so little nauseating that families accustomed to the use of it, have been unwilling to do without it. On leaving, a few years ago, a neighbourhood in which I had practised for some years, I mentioned to a gentleman continuing there the cathartic I had been in the habit of using; and warned him if he was not provided with scammony to procure some, as he would certainly be called on for it. In a very short time after, some of my old acquaintances sent many miles for some of the cathartics I had usually given, and from the statement made I judged my friend had neglected my advice. The kind alluded to is the scammony of Aleppo.

Colocynth I have made little use of, but I conclude from a few experiments, that it produces about the same effect as twice the quantity of jalap, with more nausea and griping.

The infusion of senna is a very active cathartic. The discharges produced by it are much like those from jalap. It however gripes more than that medicine. The calcined magnesia produces discharges very similar to those from the active cathartic last mentioned, but rather more serous. It nauseates and gripes little or none. In many slight cases any of these will produce a discharge of such matter as we consider desirable and necessary in treating our autumnal fevers; there are many however in which no one will effect the purpose, and it is only by judicious combination of their powers that we are enabled to succeed.

Cases frequently occur in which jalap, scammony, senna, and the other more active cathartics produce only a serous discharge, and the increase of the dose only increases its quantity and not its quality. In these cases calomel freely given, from ten to thirty grains a day, in combination with any of the preceding medicines, will in two or three days at furthest, often in twenty-four hours, completely change the nature of the evacuations, and with it change the symptoms of the patient. When these serous discharges continue to appear under the

use of jalap, &c. a stupor appears and gradually increases, and the eyes become more and more suffused with blood, but as soon as deep green or black consistent evacuations take place the stupor, &c. these symptoms are removed, and the improvement in the appearance of the patient is very striking. If these dark stools be not in these cases obtained, increasing stupor, inflamed eyes, deep suffusion of the face, hemorrhage, and sometimes convulsive motions announce that the dreaded catastrophe is near and inevitable.

With the help of calomel, the more active cathartics would always be able to produce all that can be desired in these cases, were it not for one bad effect of this excellent medicine, ptyalism. I know that many consider a patient safe in this state; but sad experience has convinced me *long since* that the opinion is erroneous. The safety of the patient depends *not upon producing ptyalism*, but on *evacuating day by day the dark matter above described*, until, *under the use* of the proper means the discharges become natural in colour. The limits of this essay do not admit of my stating cases to prove this; but it may be just observed, that *on trial it will be found correct.* To avoid a high degree of ptyalism, when calomel has attained the end in view, viz. the production of dark passages, it may be laid aside and the catharsis continued by the other medicines until the evacuations begin to return to the serous transparent state. It must then be resumed, and as soon as the object is effected, laid aside again; and thus ptyalism will often be avoided.

I have however met with cases in which immediately on laying it aside the evacuations became serous, and the patient worse. It was to meet these cases the experiments mentioned above were made, the result of which was, that aloes is decidedly the best substitute we have for calomel.

Since then I have been constantly in the habit of using a small proportion of calomel, and instead of it a portion of aloes with jalap or scammony. If ptyalism take place during this limited use of the calomel, it is dropped for a few days, and resumed, if necessary, when the affection of the mouth wears off. This does not often occur, and when it does is generally very slight. *I have never, since using this combination*, met with a case in which the evacuations became during the use of it serous after having been consistent, &c. The jalap and aloes are *effectual* in maintaining a continuation of consistent discharges.

The prescriptions I have commonly found effectual are the following:

℞. Scam. Aloet. Rhei. and Calom. āā ʒss. M. f. pill 24.
℞. Jalap. Aloet. and Cal. ā ℈ij. M. f. pil. 24.

They are nearly equal in efficacy; the latter perhaps a little nauseating, but very little. Finding some mouths affected even by this proportion of calomel when continued a week or more, I have latterly used a smaller proportion:

℞. Jalap, aloet. ā. grs. 48. cal. gr. 24. f. pil. 24.

If the mouth become affected the calomel is left out for a few days. Water alone is sufficient to mix any of these into a mass for pills. In general four or five of these pills operate freely: three or four very commonly, and often two, act sufficiently. In some instances two or three doses have been required at the outset, but afterwards the difficulty in general is at an end.

Cases now and then occur, in which the difficulty of moving the bowels is excessive. Five or six doses of these pills have but seldom, however, failed, if given in the course of half a day. When they have failed to operate freely, I have sometimes observed one or more of them in the chamber pot, or bed-pan. It is therefore advisable, to have them fresh made, and not too hard. They, however, in some cases are too slow; and then I have found an infusion of senna to promote the operation. Jalap alone, is also a very good assistant, but the nausea produced by it, is a strong objection. When however, there is extreme difficulty of obtaining a passage from the bowels, the result of venesection as above stated, ought always to be remembered. As soon as it is found that several doses have had no operation, the patient should be bled as freely as the pulse will admit. The good effect of this measure, is a matter of frequent observation. By persevering in the use of cathartics of this kind, and bleeding when necessary, in every case that has hitherto occurred in my practice, purging has resulted. Great effects have, however, sometimes been necessary. In the case of a girl of twelve or thirteen years of age, in dysentery, every effort that could well be devised, excepting only bleeding, the advantage of which, in such cases, I was not then acquainted with, was made for a whole week, without the least advantage; not a single passage was procured, though my efforts were incessant. Her groans were in the highest degree distressing, and her death appeared inevitable. Determined never to yield as long as there was a chance left, and reflecting on the singular circumstance of her stomach retaining every thing that was given for several of the last days of the week, it occurred to me, to make a regular conti-

nued effort, by large doses of jalap every hour. She commenced immediately with sixty grains; it was repeated every hour regularly; the fourth dose operated; the passages were of the deepest green, large, and barely fluid; as long as the discharge continued free, she was almost entirely easy. After three or four passages, they became small, and the pain began to return. Without delay she began again to take the same doses; there was no operation after she re-commenced, until she had taken four doses, when the same kind of passages came away, and continued till she had had three or four. As they dwindled, the pain returned. Encouraged by the success that had attended this active practice, with the full approbation of her friends, she commenced again, taking the same doses. The third operated, and, without any more medicine of any consequence, the discharges continued for a week moderately, and she perfectly recovered. She took eleven such doses in less than twenty-four hours; and there is not the least doubt of the fact, of the medicine having been given. The girl lay within twenty feet of my office; I saw her frequently in the day; and her mistress, Mrs. S. is a woman prompt and resolute, and entirely to be credited.

It is worthy of remark, that I never met with one of these formidable cases which did not end favourably, provided medicine was given in sufficient quantity to effect a free evacuation of dark matter from the beginning; and, I never knew one end favourably without. I once had an opportunity of observing the course of a bilious fever of moderate violence, in which the patient absolutely refused to take any thing. She lived about six weeks. She had no passage except one, small, hard, and black, every six or seven days. Her skin gradually became dark; she became idiotic, and finally sunk. In another case of extreme violence, the patient was equally obstinate. She, however, had better fortune. A spontaneous discharge of matter perfectly black took place, and continued very freely for several weeks, and she recovered.

This treatment is necessary in every grade, and every form of our autumnal epidemics. If the action be so high as to require blood-letting, or so low as to call for stimulants, this evacuation must continue. The retention of this black matter is always dangerous, often fatal. Some have considered the union of stimulants and evacuants as incongruous. Far from it: I have often witnessed the very best effects from the addition of an equal quantity of camphor or asafœtida, to the rest of the ingredients of the above pills;* and more active stimulants have

* ℞. Jalap. aloet. calom. camph. āā ʒss. M. f. pill. 24.
℞. Jalap. aloet. calom. asafœt. āā ℈ij. M. f. pill. 24.

been occasionally used at the same time. In these low cases, the patient sometimes cannot bear the loss of an ounce of fluid. It is then advisable to omit the jalap. There will be immediately after, a marked difference in the consistence of the passages: they often becoming on this change of medicine, consistent enough to retain the shape given by the rectum, but remaining as high coloured as before. It has frequently happened, that patients have fallen into my hands in an advanced stage of the disease, so enfeebled, partly from the continued use of improper cathartics, that evacuations have been considered no longer admissible, and even a positive injunction laid not to employ them. Administered however, in the cautious, yet effectual way above stated, the patient has improved daily, acquiring appetite and strength, and finally has left his bed, and walked abroad under the daily use of cathartics.

In the different forms as well as the different grades this treatment is effectual. Dysentery we have elsewhere shewn to be a mere variety, consisting in an aggravated degree of a single symptom, and, *in general* not to be distinguished after a day or two from a common autumnal fever. There is, however, one medicine, the mention of which should by no means be omitted; we mean ipecacuanha. The peculiar effect of this medicine is to relieve the tenesmus and griping. I have never yet known a patient die of dysentery, who could retain a sufficient quantity of this powder to operate on the bowels. I have several times known patients recover by the use of it alone, without any visible effect. The difficulty is, that many are vomited by very small doses, even by one grain. Until the year 1816 I never had any difficulty in the treatment of dysentery. In the summer and fall of that year it was epidemic. The ipecacuanha would not remain on the stomach in doses of a single grain. I was compelled to have recourse to the plan above given, and with as much success as usual in the other forms of autumnal disease treated in the same way. The ipecacuanha had been laid aside for some time, when I was called to visit a negro man about five and twenty years of age. He had taken various medicines, oil, &c. &c. but without effect, and apprehensive of his death, his master had that morning had him carried to a quarter not far off. As I rode up his groans were distinctly heard at some distance. The griping and tenesmus were almost incessant, the evacuations very small, with a mixture of blood and green matter. It suddenly occurred to me to try the ipecacuanha in this case. He immediately took ten grains, and with such effect as I can

never forget. Sitting listening to the old people in the house, it was sometime before I was aware of the cessation of the groans of the patient; as soon as I became sensible of it, I turned round and found he was laying quiet, and perfectly easy. Three more such doses were left, with directions to take one morning, noon and night; and if he became worse at *any time* to take a dose. On the third day he had seventy grains ipecacuanha divided into three powders; the object being to give as large doses as could be retained. On the fourth day he had four powders, each twenty grains: on the fifth, six powders; on the eighth, six powders, each twenty-five grains. After the fifth day I did not see him. The medicine operated freely every day, discharging deep green matter, and the patient recovered. Two grains, or even one, in the form of a pill, every hour or two, have often had a similar effect.

The only peculiarity in the the treatment of the intermittent form of our autumnal fevers, consists in an endeavour to prevent the action of the heart from sinking into the low state preceeding every exacerbation. Without entering into this subject fully, it is evident from the phenomena of the cold and hot stage of fever, that there is a derangement of the circulating fluid; in the cold stage a very great proportion being in the interior vessels; in the hot, a large proportion in the exterior. It is equally evident that when accumulated within and crowding on the heart, the natural stimulus of that organ is presented in unusual quantity, and the hot must necessarily follow the cold stage, if the heart be capable of increased action. The violence of this finally subsides, and the blood lately filling the arteries and the vessels of the surface, retires to the interior; and after an interval, is accumulated there in as great a degree as in the first cold fit. If the accumulation within be prevented from increasing to its utmost degree; if the blood while accumulating can be sent forward so as to prevent the degree of fulness of the interior vessels existing in the cold stage, that stage is moderated or prevented; and with it the following exacerbation is also moderated.

This has been attempted in various ways, for the most part empirically. Among the vast number of popular remedies, perhaps every successful one acts in this way. Such are running or walking a certain distance a short time before the access of the cold fit; boring a hole in a tree, blowing in it, and running home without looking back; stewed drams at the same period of the paroxysm, and a great variety of others, the effect of which is obviously to promote the circulation of the blood towards the surface. Among medical men the

same thing is usually attempted by emetics, by bark, by laudanum or opium, and in obstinate cases by a salivation. The former are given a little before the access of the cold fit, and the effect of each is obviously to promote the action of the heart, whereby the accumulation in a very great degree, and consequently the accompanying symptoms are prevented. Repeated emetics have cured the most obstinate quartans and tertians. The effect of keeping up the action of the heart in any manner however simple, is sometimes strongly exemplified in intermittents that make their attack two hours later every day. If the attack be at seven on one evening, at nine on the next, at eleven on the next, the patient often misses it by being *warm in bed.* And the next we hear of it is an attack in the morning or sometime of the second day following. Salivation acts in the same way. The mercurial action is remarkably uniform and durable, and the action of the heart is not allowed to sink down into the low state observed in the cold fit.

Seeing then that the object to be effected in these cases is to support the action of the heart when low, reduce it when high, and to evacuate the dark matter so often alluded to; it occurred to me that the pills above mentioned as effectual for the latter purpose, being composed of stimulant cathartic medicines and often actually exciting the system so that patients themselves noticed it, would answer for the other. That, by giving them after the fever, two hours before the next cold fit, they would tend directly to prevent the accumulation of blood in the interior, and by the time that the fever began to rise, their operation would contribute to keep it down. This plan was tried, and the result was as follows. During the fall of 1823 it was decided by successful results, excepting only in two cases. In one of these the chill was removed, but returned; the patient, however, did not take the pills as long as I wished, and the return was apprehended. In the other, the patient became tired of *one medicine*, and the case occurring before the good effect was so manifest as it afterwards appeared to be, opium and camphor were substituted in doses of two grains of opium, and five of camphor. He took five pills in five days, and was cured. In a few cases in the beginning, the pills were made up with the saturated solution of arsenic instead of water; but the solution itself having failed, this was soon laid aside, and reliance was placed on the pill made with water alone. Such has been the success of this plan, that a number of persons have applied in the course of the present winter, from a considerable distance around, with agues which have continued from the different summer months to the pre-

sent time, notwithstanding all the efforts made to remove them; and so far without one failure.

The same treatment is also necessary in the winter epidemic, bilious pleurisy. Bleeding and blistering will not, as in ordinary pleuritic affections, remove it; purging is indispensable. The passages are as above described in autumnal fever, and the evacuations should be continued to the same extent. Bleeding is not often necessary, sometimes inadmissible, and if employed, manifestly injurious. Blistering is by no means so serviceable as we are tempted by the symptoms to hope it will be; and we finally are reduced to a dependance on cathartics; and they fail us not oftener than usual, in autumnal fevers of equal violence.

In the winter of 1814, in Fauquier, as in many other counties, great numbers died of this disease. The complaint being rather novel in that quarter, various opinions were entertained. Some bled, and the patients generally died. The oldest physician at Warrenton fell a victim to it. When taken ill, he wished to be bled; the physicians advised him against the measure. He persisted, and died. Want of success in the treatment was general. Seeing the evil effects of bleeding, stimulants were tried, but the result was the same. Dr. John C. Green, now of Frederick county, Virginia, since retired from practice, then lived in Fauquier. He had thirty or thirty-one patients: of which, however, only two died. Allowing whatever could well be required, on the score of the disease being in that particular neighbourhood light, when all around was terror and confusion, this success must be admitted to be great. His mode of treatment was purging, with a mixture of jalap, and a small proportion of tartarized antimony. Some little vomiting was generally produced in the beginning. The evacuations were dark, and were continued day by day.

There is one form of autumnal or summer disease yet to be mentioned—the cholera infantum. It appears in the same circumstances in every respect, that other autumnal diseases do. It commences in hot weather, increases with it, and ends as an epidemic at the commencement of winter. Places remarkable for autumnal fevers, have been remarkable for the destruction of children, insomuch, that in some situations few survive the years of infancy.

The peculiar symptom of the disease, is an irritable state of the bowels, in consequence of which they are griped, and the discharges are very numerous; the difference between it and dysentery, being, that the evacuations are more abundant.

In both, the natural fæces does not appear; the patients in both, drag out a miserable existence, seldom recovering without medical aid; in both, a dose or two of calomel produces dark or green discharges, and those peculiar to the disease immediately cease; in children, dysenteric discharges sometimes alternate with the more abundant fluid evacuations; both forms often commence with the ordinary symptoms of autumnal fever, and afterwards assume the peculiar symptoms; in both, after the peculiar evacuations are changed to the consistent dark coloured discharges, the disease is not to be distinguished from an ordinary case of autumnal fever, and the progress of the case afterwards, and the termination in health, is the same under similar treatment.

The treatment of this form of autumnal fever, rests upon the same ground with all the others. The safety of the patient depends on a continued evacuation from the bowels of dark coloured matter, the discharge of which is indispensable in every form of autumnal disease. In this case, the same medicines are effectual, but as the bowels are in an irritable state, the more active cathartics are in general required. Five grains of calomel morning and evening for a day or two, will in most cases effect the purpose. In thirty-six or forty-eight hours, the evacuations will become dark coloured or black. They must be continued until they become natural. The dose, however, may be diminished after the evacuations appear, and a few grains of jalap or calcined magnesia added. I have sometimes used jalap and calomel for the beginning. If the passages become serous under the use of jalap or any other assistant of the calomel, the latter should be again administered alone. The same medicine I have often used in smaller doses, frequently repeated; half a grain to two grains, but seldom more than five in a day, after the two first days. After the operation is finally under way, a grain night and morning, or two grains a day, given in any way, will generally answer. When the attack has been vehement, commencing with vomiting and purging, parents are apt to be very anxious at the apparent delay; trusting to a single dose of five grains in half a day; but before the fourth dose is taken, the green discharges have commenced, and relief instantly followed. From that time there is no more watery purging. I have never had occasion to use blistering, or any tonic whatever.

Treated in the manner above stated, I will venture to say, that a dropsy, an ague cake, as it is called, or any of the evils that often follow autumnal fevers, will never occur. Further,

that the most effectual way to remove any of these, is to follow the same plan precisely; viz. treat them as if the patient were still labouring under the fever. It will be found that the matter discharged in these cases, are as above described in autumnal fever; and it is just as necessary to get rid of it. Treated in this way, patients never want bark or any thing of the kind. I did not use one ounce in the course of the great sickness of the fall of 1823. Blistering is seldom necessary, unless the case has been allowed to run on without proper evacuations. They may then sometimes be necessary to support the action of the heart, while the evacuations continue.

What I have here communicated, is the result of much observation for many years. It would be easy to support every part by abundance of cases; but there is not room for this in an essay. I may hereafter give a fuller account of my experience.

ART. II. *An Essay on Fractures of the Lower Limbs*; Communicated by the author,* J. AMESBURY, Esq. M.R.C.S. of Great Surrey-street, Blackfriars, London.

FRACTURES and dislocations are regarded to be accidents of considerable importance both, by the profession and the public. In the opinion of the profession, they are placed high in the scale of those injuries which stand in need of surgical assistance. The public believe a fracture to be a case of great moment; perhaps because they know that the patient usually suffers much pain in the injured part, and is under the necessity of submitting to considerable confinement; or, it may be, from the knowledge that the bones sometimes cannot be made to unite; and that they sometimes unite in such a manner as to leave the patient the subject of lameness, and of incurable deformity for the remainder of his life. Daily observation is sufficient to convince us of the manifold evils which accrue to society from the improper union of fractures. Much has been said upon this subject by men of great natural talent and professional acquirements, but though their observations have added considerably to our knowledge in this department

* This apparatus obtained the Gold Vulcan Medal, from the Society of Arts, London. An essay on the same subject was published in a former number. This contains the author's recent experience, with more mature views on this interesting subject.

of surgical science, I am disposed to think that they have left much for their successors to accomplish.

Feeling convinced of the imperfection of the plans which are commonly resorted to in the treatment of fractures of the lower extremities, I have been led to adopt a practice which I believe will be found to differ materially from any that has been hitherto pursued. The plan of treatment to which I allude, has for its object the prevention of deformity and non-union; and also to add to the comforts of the patient during the period necessarily required for the union of the bones. It consists principally in the employment of a new apparatus which is calculated to secure the fractured parts in their natural position, and to prevent them from moving upon each other. The degree of perfection to which I have now brought the apparatus that I employ in the treatment of those accidents, enables me to lay it before the public, with a hope that its utility will be found sufficiently supported to bear the fullest investigation.

The motions of the trunk and limbs are performed by the action of the muscles upon the bones which form the support or frame-work of the body. The action of the muscles, which produce these movements, is voluntary or the effect of volition. But, muscles have besides a power of acting independently of the will, and this power is constantly exerted in a tendency to approximate their points of attachment. This, in its natural or ordinary degree, is called the tonic power of the muscles; but when inordinate it is denominated spasm.

It is not the exertion of the voluntary power that a surgeon has to fear. A man with a broken leg or thigh does not willingly put the muscles of the limb into action, because he is aware that any attempt to move the limb would give him pain; not only at the moment, but more remotely, by producing derangement in the fractured parts. It is the latter mode of action, which is increased by mechanical or other stimuli, that a surgeon has to dread in the treatment of fractures. This operates materially in producing shortening of the limb. It has a constant tendency to displace the fragments; and its effects are the more injurious in proportion to the obliquity of the fracture. The slightest riding of the bones increases its activity. Over it the patient has no control, and the surgeon has too often found it frustrate his best curative intentions.

As the action of the tonic power of the muscles is increased by any thing that irritates their bellies; and, as it is by the action of this power, principally, when no longer resisted by

the contact of the bony surfaces, that shortening of the limb is effected, it is evident that all those causes which tend to produce derangement of the fracture and to separate the fractured surfaces from each other in the transverse direction, should be, if possible, avoided, even if it were for no other reason than to guard against shortening of the limb. But, however attentive the patient may be, he is not able to prevent the derangement of the fragments of a fracture; for when a limb is broken it is no longer under the command of the patient's will; the fracture, therefore, is liable to be displaced by a variety of external causes, the action of which the patient is not able to resist from any power that may be still inherent in the injured limb. Among these causes are the different movements made in the body to answer the calls of nature, inadvertent movements in the limb itself, &c.

From what I have said, it will be seen that the principal causes which produce derangement of a broken bone, are mechanical forces foreign to the injured limb, and which for the most part are purely accidental; and those more important causes arising from the tonic contraction of its muscles.

After a surgeon, therefore, has reduced a fracture, he should turn his attention to the means of guarding the fractured parts against the influence of accidental or intentional changes in the position of the body, and the effects of any impetus given to the limb itself below the site of fracture. He should take care that his means possess the power of resisting the involuntary action of the muscles. He should also consider in what way these indications can be answered with the least possible inconvenience to the patient, and at the same time in such a manner as is calculated to give him every advantage which is likely to insure a proper and speedy union of the bones. Some mechanical contrivance which would enable the surgeon to effect these purposes, has been long a desideratum; any attempt, therefore, however humble, which has for its object their accomplishment, has some claim to the notice of scientific men.

It is not necessary that I should enter into a detailed account of the various splints and machines that have been invented for the treatment of fractures, since it is to be presumed that the ordinary means are the most approved. But these, concerning which I shall say a few words, I may venture to assert, are, in many cases at least, inadequate, even in the hands of the most competent and skilful surgeon; and in all cases uncertain in their effects.

The pieces of deal which are usually called short splints,

when used in the treatment of fractures of the thigh, have but little effect in guarding the fractured parts from motion; or in guarding them from being displaced by the motions of the body; or by any accidental impetus given to the limb below the fractured part. This, I think, will appear from the first experiment related in my observations upon fractures of the lower extremities, and also from the experiments related in my observations upon the fractures of the arm. When they are made use of for fractures of the leg, the same objections will apply, though not so forcibly. Besides, there is nothing in their construction to support the heel or sole of the foot, consequently, if the fracture is loose, displacement will take place; and, if the fracture extends into the ancle joint, the bone may unite in such a manner as to produce that permanent extended state of the foot upon the leg, which is usually denominated pointed toe. Again, there is nothing in their construction which is sufficient to prevent the occurrence of eversion of the foot, consequently, we frequently see patients who have been treated with these splints, ever after walk with the inside of the affected foot turned forward. Further, it is generally necessary to keep up extension in the treatment of fractures of the thigh, and frequently in the treatment of fractures of the leg; but there is nothing in the form or mechanism of the short splints which is capable of doing this.*

In order to overcome the difficulty which arises from the retraction of muscles, surgeons have adopted what is called the long splint. This is placed along the outer side of the limb, so as to keep up extension between the hip bones and the foot. There are several varieties of the long splint, but all that I have yet had an opportunity of examining, fall far short of answering the indications which present themselves. The inventors, it would seem, have confined themselves to the mere idea of keeping up extension, with but little regard to the form or mechanism of the limb. Hence we perceive that, though any one of them may occasionally answer, they must all, from their very nature, be often insufficient, and frequently injurious. Thus we see that the long straight splint with a screw, tends, by its action, to keep the fractured surfaces from each other, when used in the treatment of fractures through the neck of the thigh bone; and, therefore, instead of assisting nature to bring about an union, it tends to prevent it; and may be often a cause of non-union in fractures that, with more favourable means, may be made to unite. Again; when used for fractures extending through the lower end of the

* This remark does not apply to the improvement of Hutchinson.—Ed.

thigh bone, its tendency is, to leave the patient lame for ever after the cure is effected, from the position in which it causes the bone to unite. Many other evils attending the use of the long splint may be pointed out, equally injurious to the patient; but those I have mentioned are sufficient to shew that it must frequently fail to produce the beneficial effects which the surgeon should have constantly in view. Yet this splint is generally considered the best that has hitherto been used in order to prevent shortening of the limb.

Many of the evils which arise from the use of this splint are produced by the straight position in which it must always confine the limb. Some surgeons are aware of this; and being fully sensible of the advantages which accrue to the patient from bending the limb, in certain cases, they make use of what is called the fracture box, or the double inclined plane. Both of these contrivances are constructed upon the same principles; and the chief difference in them consists in the introduction of a foot board in the fracture box; but this is made in such a manner that it can have no other beneficial effect than to keep the foot from falling to the inner or outer side, and to support the sole. Both of these apparatuses have some advantages over the short splints, and also over the long splints in some cases; but even in the treatment of those cases for which they are considered most applicable, their employment is frequently attended with disadvantages that materially militate against their use.

It may not be improper to state, that the apparatus called the double-inclined plane, consists of a frame and of two pieces of board, fastened together in the middle by a hinge. One end of one of these boards is connected by means of a hinge to one end of the frame of the apparatus; the other board is left unconnected at one end, so that it may be made to form an angle of any degree with the board to which it is attached at the other. When the surgeon has found the angle which he thinks most advisable for his case, he may fix the two planes at that angle upon the frame, by means of a rack placed there for the purpose.

The fracture box and the double-inclined plane are principally used in the treatment of fractures of the thigh; and when either of them is employed in the treatment of these accidents it is intended that the thigh shall be fixed upon the apparatus. This intention is not answered, because the weight of the trunk causes the bed to yield under the nates; while the wide frame of the fracture box, or of the double-inclined plane, prevents it from sinking in the same proportion. This

alteration in the relative position of the body, with respect to the apparatus, is followed by a variety of injurious consequences. If the apparatus is placed so as to support the back of the thigh at all, the upper part of the limb is forced against its corresponding end; and the pressure thus produced, frequently occasions pain, tumefaction, and sometimes abscess, at the upper and back part of the thigh: and if the fracture is high up, the action of the flexor muscles of the thigh, assisted by the pressure of the apparatus, frequently produces displacement of the bone in the transverse direction; and, as soon as this is effected, the muscles, which bend and extend the leg upon the thigh, being no longer resisted by the contact of the fractured surfaces, act upon that part of the limb which is below the fracture, so as to keep it close upon the apparatus; while the trunk, by its own gravity, sliding towards the foot of the bed, forces down before it that part which is above the fracture. Thus the upper portion of the bone is made to pass the lower; which, compared to the upper portion, may be said to be fixed upon the apparatus. The displacement which follows the combined operation of these causes, is too often productive of great and permanent shortening of the limb, great deformity and lameness. The results which daily follow the use of these contrivances, show that they have but little influence in preventing displacement of the broken extremities of the bone. Again; even if no other mischief should occur, when the patient raises the hips to answer the calls of nature, the upper fragment, following the direction of the pelvis, is raised from the apparatus, and motion is produced in the seat of fracture. This motion frequently produces pain, and much retards the cure. Hence it may be seen, that there is little dependance to be placed upon the support which is given to the limb by the fracture box, or the double-inclined plane, in the treatment of fractures of the thigh. Further; it is often necessary to keep up a steady extension when the limb is placed in the bent position; but in what way this can be done by the fracture box or the double-inclined plane, I am ready to confess myself at a loss to determine.

I have now endeavoured to give a general notion of the imperfections of those means which are usually resorted to in the treatment of fractures of the lower limbs, and also in the treatment of dislocations of the ancle. I might have mentioned many other contrivances which have from time to time laid claim to notice; but as those I have touched upon are the most approved, I may be allowed to pass over the others in silence.

What I have stated respecting those contrivances in common use, will be sufficient to show that some improvement in the treatment of fractures was required.

Strongly impressed with the importance of these accidents, both to the surgeon and to the patient, I was led to contrive an apparatus for the treatment of them, upon principles which to me are new. The principles of this apparatus, and the advantages it gives to the patient, as well as to the surgeon, I shall now attempt to describe.

In my observations upon fractures of the lower extremities, I have endeavoured to show, that, in the treatment of those which occur in the leg and thigh, it is proper to fix the whole limb as far as the hip joint; and that in certain cases it is advisable to fix the pelvis also. The first of these principles my apparatus is capable of effecting; and the second it accomplishes by the assistance of a bandage.

By this apparatus the limb can be fixed in such a manner, that if the fracture is not through the neck of the bone, or the trochanters, it may be made entirely passive to the motions of the apparatus, whenever an impetus is given to it, either above or below the situation of the fracture, and so as to allow of the total motion of the limb in the hip joint, at the same time that it prevents any motion between its parts.

Hence we see, that when the fracture is through any part of the limb below the upper third of the thigh, any motion given to the pelvis, as in the act of raising it to answer the calls of nature, and in the act by which the patient draws himself up in bed to obtain relief from any uncomfortable position, motion is given to the instrument, and by it, passively to the limb, which, however, does not feel it in any particular part, but as a whole, from the hip joint to the very sole of the foot. Again, the limb may be passively rolled upon the bone to which it is connected, without producing any motion in the situation of this fracture; and this is the case, whether there exists one fracture or a dozen.

In most fractures of the thigh, when the limb is bent, the power of those muscles, which have the greatest tendency to displace the fragments, is much weakened; but yet, by what is called their tonic power, they are capable, in many cases, of acting sufficiently to produce considerable displacement of the fragments. From this, we may learn that something is required to resist the action, even of those muscles which are so placed upon the limb as to admit of being greatly weakened by position. In some cases, the straight position is the best for the surgeon to adopt. But whether the fracture be

such as would render it most advisable to place the limb in the straight position or in the bent, a steady resistance to the action of the muscles is generally required. Fractures of the leg too, which pass through the bone in an oblique direction, require the application of a steady extending force to prevent shortening of the limb. But this cannot be done with any of the ordinary contrivances, with a proper regard to other indications.

The apparatus which I propose, is so contrived, that it admits of being altered in such a manner, that it can be made to act according to the situation or nature of the accident; and, I trust, will be found capable of resisting the action of those causes which are so frequently productive of deformity and lameness.

In order to judge more clearly, how far my apparatus may be worthy of the notice of the profession and the public, it will be proper for me to enter a little into detail. In doing this, I will briefly relate some cases, by way of illustration; which I shall choose from among those that have been treated with my apparatus in public hospitals, in preference to those that have occurred in my private practice.

In the treatment of all cases of fracture through the upper third of the thigh, I may say, that the action of this apparatus is more complete than that of any other which I have seen employed.

When used in the treatment of fractures through the neck of the thigh bone, it may be made to keep the injured limb as long as the other, to support the limb in a proper relative position with the bones to which it is naturally connected, to prevent the foot from becoming everted, and to keep the broken ends of the bone closely applied to each other. These effects all tend to the same beneficial result; viz. to assist nature in her efforts to consolidate the bone. They are advantages, which, collectively taken, cannot be obtained by employing any of the ordinary means; nor in my humble opinion, if it were possible, all of them together. We have only to fix the lower part of the body, and, with my apparatus, every other indication which I have noticed, may be fully answered.

But though I should always advise the lower part of the body to be fixed, in such cases, as a precautionary measure, it does not appear that it is essential to do so in every instance, where my apparatus is employed.

When the apparatus is used in the treatment of fractures which extend through the bone just below the parts contiguous to the neck, it admits of being adjusted at any angle the

case may require. It thus enables the surgeon to weaken the action of those muscles which tend most to displace the fracture, and at the same time, by being placed so as to keep up a steady extension, it prevents the limb from becoming shortened, although it be fixed in the bent position. It also keeps the fractured surfaces closely and steadily applied to each other, and prevents the foot from becoming everted. It has the advantage too, even in this situation, of enabling the surgeon to relieve his patient, in some measure, from the irksomeness of confinement, by allowing him to have his bed made occasionally, and to have clean linen as often as he wishes. But the advantages which are gained from the use of the apparatus in the treatment of such cases, may be rendered more apparent and more satisfactory by giving an example.

A man, aged 51, fell over a tub and broke his thigh across the upper third.* He was admitted into Guy's hospital, under the care of Mr. Foster, and the usual splints were employed; but he suffered greatly from their use, and they all failed to keep the bones in proper apposition. On the tenth day, the bones overlapped so as to make the fractured limb from two to three inches shorter than the sound one. There was also an angle formed at the seat of the fracture, which might be represented by the elbow when the arm is bent. My apparatus was now applied, and was kept upon the limb for a month, when it was taken off, and the bone was found united. The limb which had been fractured, was now of the *same length as the other*, and there was not the least apparent deformity in any way.

His bed was made two days after the apparatus was applied, and this was repeated at the end of a fortnight. The limb could be rolled upon the bone to which it is connected, without giving him pain or disturbing the fracture. He could draw himself up in bed, without experiencing any sensation of motion or of displacement in the injured part.

Fractures of the thigh most commonly occur through the middle third, and I think we may average as many fractures below the middle third as above it; I will therefore assume, that four fractures of the thigh out of five, occur below the upper third; and I think I am much within the number. Now, in addition to the advantages above stated, when my apparatus is employed, a patient, with any kind of simple fracture of the thigh through the middle third, may not only have his limb passively moved as often as he wishes, but, in many cases, he

* From one inch and a half to two inches below the trochanter minor.

may, with common care, turn in bed without retarding the cure, and without any danger of disturbing the fracture.

A man, aged 20, was admitted into St. Thomas's Hospital, with a fracture of the thigh. He had fallen under a waggon containing a load of about two tons; and the wheel passing over the thigh, occasioned a fracture across the middle third. Two days after the accident, the apparatus was applied; and he was desired to place the limb either on the heel or on the side, as he felt one or the other of these positions most easy to himself; and to alter it from one to the other, at pleasure; and also to have his bed made every other day. This mode of treatment was followed for a month; and, at the end of this time the bone was united. He now got up with the apparatus on, sat in a chair, or walked about the ward with the assistance of crutches. Three days after this the apparatus was taken off, and at the end of six weeks from the time of the accident, he was able to walk with the assistance of a stick; and at this time, not the least shortening or deformity could be discovered.

With respect to the fractures that occur through the lower end of the bone, and which are by many considered incurable without great deformity and lameness, I may say, that the apparatus is as capable of producing the same happy results, as in those cases which take place through the middle of the bone. But lest I should be looked upon as tedious, I will leave the consideration of fractures of the thigh, to say a few words relative to its effects in the treatment of those which occur in the leg.

When the apparatus is used in the treatment of simple fractures of the leg, the patient may get up a few days after the accident, (the time being regulated by the surgeon) and with common care and attention, he may walk about with the assistance of crutches, without any danger of deranging the fracture, or of producing deformity in the limb.

Some surgeons consider, that a patient with a broken leg should not be allowed to get up so soon; because, in their opinion, the practice would produce great irritation, and retard the union of the bones. But both of these objections are purely hypothetical. I may answer the first by inquiring, Why then allow a patient to get up with a fractured arm? And the second, by the following case:

A man, 55 years of age, was admitted into Guy's Hospital with a fracture of both bones of the leg, through the lower third. The fracture of the large bone extended obliquely into the ancle joint. The accident was occasioned by a fall from

the step of a carriage. The apparatus was applied, and the man was up on *the third day;* and on the fourth from the time of the accident, he began to walk about the ward with crutches. On the twenty-fourth clear day after the accident, the bones were found firmly united; and at the end of the fifth week, just at the time he might with the common treatment have had his bed made for the first time, he was able to walk across the ward without crutch or stick.

This man got well much within the usual period, without any unpleasant symptom, without deformity or lameness; and his case, to which many may be added, must be regarded as a proof in favour of the practice of allowing patients to be about, before the bones are united.

As a contrast to this, I may give the case of a man, about 30 years of age, who was admitted into St. Thomas's Hospital with a fracture of both bones of the leg. The apparatus was applied on the fifth day from the time of the accident, and he was suffered to lie in bed, in one position, for *eight weeks;* and *at the end of this time*, though he remained quiet, and had his bed made only once during the eight weeks, *the limb was not united.* He was now allowed to get up with the apparatus on, and walk about with the assistance of crutches; and under this treatment, the bone united firmly.

This case occurred in a fine young man, possessing a healthy constitution; he had no infirmity which tended to retard the union of the bone. It will be recollected that the same apparatus was used in both cases. If we take the ages of these two men into consideration, we shall find that the bones of the latter ought to have united in a shorter period than those of the former; and therefore, if no advantage were gained from allowing the patient to be up, we might have expected the cure to be at least equally speedy in the man confined to bed, as in him who was permitted to leave it. Here then, is a case, which proves that when patients are confined to bed, the bones unite much more tardily than when they are allowed to move about, even when such means are made use of, as are equally capable of fixing the parts, whether the patient be in bed or not.

I must here be allowed to remark, that I do not mean to insinuate by the above observations, that a man with a fracture of the leg may be permitted to leave his bed before the bones are united, when the limb is guarded by the usual means only; on the contrary, I believe that it is a practice which cannot be followed with impunity. When such means are resorted to as cannot be made to fix the fractured parts, we must of two evils choose the least, and cure the limb at the risk of weakening

the constitution; but when the case is of such a nature that the patient may, without danger, be allowed to be about, it will hardly be denied that that practice which effects a cure most speedily, and at the same time saves the patient from confinement, must certainly be the best.

At the time my apparatus was first brought forward, it was considered by some surgeons, that the common splints could be made to confine the limb sufficiently to admit of a patient's leaving his bed without any danger of deformity or non-union. It has come to my knowledge that this practice has been tried in several cases, one of which I will mention, as a caution to my brethren.

A healthy young man was struck upon the leg, with a force sufficiently powerful to break both bones. He had the common splints applied, and *three weeks* after the accident, he was allowed to get up with them *closely* confined upon the limb. He was up for *twelve weeks*, cautiously walking about with the assistance of crutches, carrying the limb in a sling. He now came to St. Thomas's Hospital, as union had not taken place: the day after his admission into the hospital, my apparatus was applied, and the man was desired to walk about with the assistance of crutches, as much as he pleased, taking care to carry the limb in a sling. The apparatus was worn thirty-two days, and at the end of this time the bone was found united.

Here it will be observed, that one mode of practice was followed for twelve weeks, after three weeks confinement in bed, and failed to do what was accomplished by another in thirty-two days; and therefore I think we may fairly infer, that the cause of non-union in this case is referable to the line of treatment which had been previously adopted.

Not only does the apparatus succeed in the manner above stated in common cases of fracture of the leg and thigh, but in cases where the contrivances usually resorted to have failed to produce union; in proof of which I may state the following case, which occurred in a person well known to fame.

I was called to Mr. Wallack, the actor, in consultation with Sir A. Cooper, and Mr. Tipple of Mitcham, in consequence of his being confined with an un-united fracture of the leg. The fracture had existed seven months; during this time he had been treated in the manner usually advised. This gentleman had been under the care of some of the most eminent surgeons in America, Drs. Post, Kissam, and Physic, all of whom are well known in the surgical world, and I mention their names to show that Mr. W. had not been neglected.

Finding the various attempts made to unite the bone, unat-

tended by any beneficial result, he came to London for further surgical advice.

The apparatus was applied, and he was desired to take an airing every day, with the assistance of his crutches, or in his gig. This he did, and also frequented the public places of amusement. The treatment here mentioned, was persevered in for forty days, and at the end of this period the limb was found firmly united, and he is now following his usual avocations in London.*

The method by which this cure was accomplished, for all that I know, is new, and I trust will be found to supersede the painful and too often unsuccessful practice of sawing off the ends of the bone, of applying caustic to them, of introducing setons through the limb, &c.

I have now endeavoured to give a general view of the utility of the apparatus in the treatment of recent simple fractures of the leg and thigh, and also in the treatment of those that have resisted the common means. It yet remains for me to show, how far it is applicable in the treatment of compound fractures, and in the treatment of dislocations of the ancle, and injuries of the knee.

By the term compound fracture, surgeons mean a solution of continuity in a bone, produced by violence, with a wound leading to the bone at the fractured part. This difference in the nature of the accident, trifling as it may seem, often sufficiently complicates the injury to make it strike at our existence. The untoward symptoms in these cases are greatly increased by the riding of the broken ends of the bone, the serrated edges of which prick and lacerate the surrounding textures, and produce pain, spasm, and inflammation in the limb, which too often go on to the death of the part and the destruction of the patient; and if the inflammation, by the help of a good constitution, should terminate in the formation of matter instead of in mortification, the matter not having a ready exit, burrows amongst the contiguous textures, producing abscess after abscess in distant parts of the limb, and often obliges the patient to submit to amputation in order to save himself from an untimely grave. These exasperated evils, in my humble opinion, ought more frequently to be attributed to the mode of treatment which the common plans oblige the surgeon to adopt, than to the nature of the injury which he has to treat. With them his hands are fettered; he sees but

* I have treated six other cases upon the same plan, and all have proved successful.

he cannot act. By the help of my apparatus, I may say, from experience, that the surgeon can make use of the most powerful means to prevent or subdue the dangerous symptoms; means which he does not dare employ without the assistance of some such contrivance.

I might bring forward various cases in proof of these assertions, but one will suffice for the purpose of illustration:—

October 19th, 1822. As a woman, aged 39, was riding from London to Croydon, in a cart containing a load of about one ton weight, she fell from it upon the road, at a part which had been recently covered with flint stones. The wheel passed over the leg as it lay upon the stones, and produced a compound comminuted (broken into several pieces) fracture of both bones a little above the ancle joint. She had three wounds on the inner side of the limb, at the seat of fracture, which bled considerably. She was brought to St. Thomas's hospital in a litter, and on the 11th day after the accident my apparatus was employed. At this time the limb was bent, so as to form an angle projecting forward at the seat of fracture. At the expiration of forty days the apparatus was taken off, and the limb was now straight and firmly united.

During the time she wore the apparatus she had her bed made every second or third day, without pain or inconvenience, and without any sensation of motion in the fracture.

The observations which I have made upon the subject of compound fractures will also apply in the treatment of compound dislocations of the ancle.* In these cases the apparatus keeps the foot and leg in a natural position; it keeps the injured parts steady and in proper apposition, without impeding the circulation. It thus favours a speedy union of the soft parts and of the fracture which always accompanies these accidents; and, if suppuration should occur, it allows of a ready exit to the matter. It admits of being altered, so that the limb may lie upon it as upon an inclined plane; it thus enables the surgeon to facilitate the return of the blood to the heart, and to lessen arterial action. It allows the careful surgeon to apply any kind of dressing to the wound, and to remove it at the proper periods, without producing the least motion in the situation of the injury or any alteration in the relative position of the limb. Thus the patient is saved from the pain which would be produced by any movement which may be accidentally or intentionally given to the limb when

* In these cases the joint is laid open, and the accident is complicated with a fracture of one or of both bones of the leg.

the wound is dressed, or at any other period, and all its injurious consequences. The patient may have aperients administered, so as to produce free action upon the bowels, as occasion may require; and he may have the limb moved or have his bed made, as often as may be necessary for his comfort, without producing pain or inconvenience, and without disturbing the injured parts.

After what I have stated respecting the utility of the apparatus in the treatment of compound dislocations of the ancle, I need not say any thing respecting its advantages in the treatment of those which are simple.

In the treatment of injuries of the knee its utility consists in keeping the knee quiet, and in preventing the tender surfaces from rubbing upon each other, at the same time that it enables the surgeon to place the limb so as to favour the return of the blood to the heart and impede the action of the arteries.*

Art. III. *Case of Tumour in the Scrotum.* By Isaac Hiester, M.D. Reading, Penn.

There is a disease of the scrotum occasionally met with in surgical practice, which I do not recollect to have seen described by authors. It consists in one or more moveable tumours, resembling the testes in consistency; and sometimes so much in size, also, as to have been occasionally mistaken by patients, for supernumerary glands of this kind. That those foreign bodies, which must at all times be inconvenient, sometimes become burdensome from their magnitude and weight,

* The following summary points out the advantages attending the use of Mr. A.'s apparatus.

"1st, It fixes the whole limb so as to admit of no motion whose centre is not in the hip joint. 2d, It maintains the fractured ends in a natural position, and in perfect coaptation. 3d, It lies upon the limb with ease to the patient. 4th, It enables the surgeon to place the limb in any position the case may indicate. 5th, It allows of the application of extension and counter-extension when the limb is placed in the bent position. 6th, It is entirely passive to the motions of the limb. 7th, It admits of being adapted to limbs of different lengths and different sizes. 8th, It is applicable to fractures in any part of the limb, and of all kinds, whether simple, comminuted, or compound. 9th, In all fractures of the thigh, it allows the patient to be placed upon a soft feather bed, and in most cases it enables him to place the limb upon the heel, or upon the side, and to alter it from one to the other at pleasure. 10th, When used for simple fractures of the leg, it enables the patient to leave his bed as soon as the inflammation produced by the injury is sufficiently got under, and this too, without any danger of displacing the fractured ends. 11th, With all these advantages, it insures to the patient a speedy recovery, and a straight and perfect limb."

I have had occasion to witness in the following case, which I am induced to offer you for publication, with the hope that it will elicit farther information on a subject, which although it may not hitherto have claimed, certainly merits the attention of the profession.

Mr. John Meers of this place, æt. 26, applied to me last spring for my opinion and advice, for a tumour about the size of a goose's egg, in the right chamber of the scrotum. He informed me that he first observed it about six years ago, and that it was then about the size of a hickory-nut. As it was unattended with pain, it did not particularly engage his attention, until at length, by a gradual increase it became so large and heavy, as to be very inconvenient in walking. The space it occupied by its enlargement, at length obliged him to walk with his legs far asunder, and while it materially impeded his progress, it began to be attended with some pain, especially in attempting to run or jump.

Considering the circumstances of the case, I had no hesitation in recommending an excision of the tumour. Before I had finally gained the consent of the patient to submit to the operation necessary for its removal, I had the pleasure of meeting with Dr. Gibson, who came here on a visit, and who obligingly consented to visit the case with me. I was not less gratified with his concurrence in my determination to remove the tumour with the knife, than with his candour and ingenuousness in declaring, that although he had heard or read of affections of this kind, this was the first case that had fallen under his notice. Our united opinion however did not, at this time, overcome the repugnance the patient felt to the operation; but on further reflection he became anxious, in several days afterwards, to have it performed. I accordingly removed it for him, assisted by my friend Dr. C. Baum, and by my pupils Messrs. Benson, Wills, Douglass and Birch. It weighed upwards of seven ounces; and from the infrequency of cases of this sort, I was induced to forward it to Dr. Gibson, who has, I understand, politely given it a place among the numerous interesting preparations in the museum attached to the University.

The situation of the tumour was below and behind the right testis and exterior to the tunica vaginalis. Instead of being detached, however, and lying loose in the scrotum, as might have been expected from previous examination, its adhesions proved to be considerable. About one third of its anterior surface was closely connected with the *Dartos* muscle. Laterally and interiorly its connexion with the *tunica vaginalis*

of the testis and the *septum scroti* was so intimate, that even with the most patient and careful dissection I could not avoid removing a small portion of the latter membrane with the tumour. Posteriorly it was connected with the fascia of the perineum and erector penis muscle, by means of cellular membrane and some blood-vessels. One of these only was of such size as to require a ligature during the operation; but the oozing from numerous small blood-vessels after the wound was closed by means of the interrupted suture, was so profuse as to distend the scrotum to an enormous size. The next day I found it necessary to give a free exit to the coagulated blood, by cutting the ligatures. There was now no further hemorrhagy; and as soon as the tumefaction had subsided, I again closed the wound as before. The patient recovered very well, and returned to his occupation, that of stone cutting, in about three weeks after the operation.

ART. IV. *Case of Extra-uterine Gestation.* By JOHN J. MOORMAN, M. D. of Pattonsburg, Virginia.

IN the month of May last, I was requested by my friend, Dr. Tabb, of Franklin county, to visit, in conjunction with him, a patient of his, a negro woman, belonging to Capt. P. Holland. Her mistress gave us the following history of the case. "The patient is about 49 years of age, and has borne ten children. Previous to the year 1819, her catamenia had been irregular for several years, but by proper remedies they were then restored. In August of that year, she, to all appearance, became pregnant her eleventh time. Her courses ceased, milk came into her breasts, and the belly enlarged in the usual manner. In November she appeared to be greatly threatened with an abortion from exertion in leaping a fence. About three weeks after, she had an alarming flooding, attended with severe pains, and from this time to the end of the ninth month from the first appearance of conception her menses were quite regular, at which time a sanguineous discharge commenced, and continued on her during nine weeks. Her abdomen, which had enlarged in the manner usual with pregnant women, was now of its wonted size at the full period of gestation, labour pains came on, and appearances warranted a belief that she would speedily be delivered. These hopes, however, were soon defeated, for all pain ceased, and every symptom of parturition disappeared. In the spring and summer months since that period, she has generally been

enabled to labour in the field. In the fall and winter, however, she has been confined to her bed. Her catamenial discharges during the former months, were regular; during the latter, irregular and attended with much pain. She often describes a fluttering in the belly, and experiences other sensations resembling the motion of a child. In January last she was affected with severe spasmodic pains, alternately in the muscles of the abdomen, legs, and arms, with shooting pains through the head and thorax, attended with distressing nausea, which have continued ever since."

On examination, I found a large circumscribed moveable tumour situated beneath and rather to the left of the umbilicus, quite firm, and giving no pain on pressure. Examination *per vaginam*, yielded little satisfaction as to the nature of the tumour. The *os tincæ* was considerably pressed back towards the sacrum, and sufficiently open to admit the entrance of a large probe into the uterus, the fundus of which was *pressed forward* on the neck of the bladder, occasioning a suppression of urine. From the history of the case and the examination, no doubt remained of its being a case of *Extra-uterine pregnancy.* We therefore determined, as the most prudent course, to direct our attention to the palliation of symptoms, supporting the patient's strength, and to wait under the faint hope that a suppurative process would come to her relief, which, however, her declining condition almost forbade us to expect. This desirable event did not take place, and on the 22d of May, 1823, ten days after I first saw her, and *nearly four years from the first appearance of pregnancy*, she died; when Dr. Tabb and I proceeded to examine the body. On opening the abdomen we discovered the tumour, covered by the omentum, situated just beneath the great arch of the colon, and extending below to the fundus of the bladder, inclining rather to the left side, with most of the small intestines on the right; adhering firmly to the *right broad ligament and right fallopian tube*, the thickened and extended coat of which enclosed it as a cyst. The left broad ligament, fallopian tube, and both the round ligaments, as well as the ovaries, were free from adhesions. Its connexions with the omentum were very extensive, especially on the left superior and inferior portions, through which numerous large arteries and veins passed to the tumour, some of which were as large as the mesenteric artery, forming an extensive plexus of vessels on its surface, which sent forth numerous small branches into its substance. The upper portion of the tumour was irregularly convex. The under surface was irregularly concave, and lying in contact with the spine. The uterus was

perfectly healthy, and not above its natural size. The kidneys, bladder, intestines, &c. were in a natural state. On being removed from its adhesions, the *tumour* weighed eight pounds, measured 12 inches from its superior to its inferior extremity, and 20 inches in its greatest lateral circumference. A section being made into its body, it exhibited in colour, very much the appearance of the *cineritious* portion of the brain, though of more consistence, the whole of which was firmly enclosed in a membrane not unlike the *dura mater*, lying immediately within, and loosely connected with the common membrane before mentioned.

In the *inferior* part of the tumour, enclosed within the common sac, and somewhat separated from the main body by a fold in the internal part of the membrane was a plexus of blood-vessels, interwoven in a fleshy substance, which was covered by a delicate membrane, and very much resembling the *placenta;* from this appendage numerous vessels were sent into the main body of the tumour.

Opening the *superior* portion of the tumour to its centre, we found the *rudiments of a fœtus.* The head, thorax, and abdomen, were plainly made out, but we could not distinguish the extremities, or any of the viscera with absolute certainty. The cavities of the cranium and abdomen, were filled with a watery fluid resembling the washings of flesh. The thorax contained grumous blood.

Little doubt remained with us, from every circumstance of the case, that a more perfect organization had once existed, than was at this time evident. To this conclusion we were led, independently of other reasons, from the existence of some fleshy pendulous bodies, attached to the spine, within the thorax, which we thought might once have been the viscera of that cavity, though were now so disorganized as to render this fact dubious.

ART. V. *Case of Enlarged Tongue, cured by a Surgical operation.* By Dr. H. S. NEWMAN, Warren county, Penn.

ON the 27th September, 1822, I was called to visit Charles Osborn, aged five years, whose tongue was enlarged. Its length as it hung out of his mouth, measured from the apex to the teeth, 2½ inches; its circumference at the largest place, 7½; and where it was encircled by the teeth, 5½. Its papillæ were broad, flat, scabrous, and of a dark brown colour. The incisores, canine, and first molars on the left side, were broad and

flat; these, together with their alveolar processes, took a direction forwards and downwards, and by their projection, completely confined the lower lip. The lower jaw was slightly curved downwards, produced by the weight and bulk of the tongue, and by the long continued opening of the mouth, very little motion could be effected, the articulation of the condyles being almost immoveable. A constant and perpetual dribbling of saliva, descended from the point of the tongue, which kept his apparel constantly wet, from his chin to his feet. The saliva was slightly offensive; yet, notwithstanding this circumstance, and the increased secretion, no disease could be discovered in the salivary glands. He could neither articulate, nor masticate; subsisting chiefly on milk, and save a slight indisposition in the last stage of pertussis, was in good health.

With regard to the history of the case, I learned from the parents and the *midwife*, the last of whom I took particular pains to converse with, that at birth the tongue was protruded out of the mouth, but could be easily made to recede within it. The tongue had grown in the proportion to that of the body, as 3 to 1; and the disease, in their opinion, was produced by a fright from the bellowing of a cow, during the irritable stage of gestation. She also stated, that the child had been in good health, and that two longitudinal incisions had been made on its dorsum, by an eminent surgeon, when the lad was eighteen months old, with a view that it would recede within the mouth, with no other effect than loss of blood, pain, swelling, &c.

From the apparent healthiness, the great size and protrusion of the organ, I determined, that amputation was the only possible means of cure. Accordingly it was removed on the 4th of October, in the following manner. The lad, after having taken 30 drops of tincture of opium, was seated on the knees of one assistant, and his head was secured between the hands of another. A leather strap, half an inch wide, and when doubled, six inches in length, in the ends of which, when so doubled, were fastened two wooden pins, was then put round the body of the tongue. The extremes of the straps were given to assistants, one standing on each side, directions were given them to turn till a sufficient degree of compression was produced. This ligature, or more properly, *temporary tourniquet*, was placed as far back as the frenum linguæ would admit, and seemed to answer a two-fold purpose; 1st. to restrain the hemorrhage, and 2d, to secure the stump steady, that the arteries might be the easier tied. But as there were some fears that this method would not succeed, the actual cautery was

prepared. When a sufficient degree of compression was produced, I grasped firmly the tongue with my left hand, while with a scalpel in my right I severed it at a point, half an inch posterior to a straight line, drawn from the upper to the lower incisores. The tongue receded within the ligature, before I had time to exchange the knife for the tenaculum. The hemorrhage was now pretty copious. I immediately placed the left index finger on the dorsum of the stump, and with a very little pressure, instantly suppressed it; then with a tenaculum, I caught the three principal arteries, which were tied with very little difficulty. The arteries did not appear to be morbidly enlarged. To the surface of the stump, was applied a weak solution of sulphuric acid, which effectually restrained all remaining bleeding. Over the mouth was placed a bandage, and the patient put to bed.

On the evening of the second day, the stump began to inflame and swell; but, by one small bleeding and saline laxative, &c. the inflammation yielded. One ligature came off on the third, and the other two on the seventh day after the operation. The amputated portion exhibited no appearance of disease.

In length, it measured,	$2\frac{3}{4}$	inches.
Its greatest circumference,	$7\frac{1}{2}$	
Its thickness,	$1\frac{1}{2}$	
And in its width,	$2\frac{3}{4}$	
Its weight, was	3	ounces.

In two weeks, the lad was completely well. The mouth, however, remained open, and the inferior labium, as above described, confined by the projecting incisores; these were now extracted, and a bandage applied to the chin, with a slight pressure, which being continued a short period, perfectly kept up the inferior labium. It is now one year and a half since the operation. He has completely regained the use of his jaw, his lips are properly closed, his taste is accurate, and his articulation so perfect, that he pronounces the letters of the alphabet very intelligibly.

ART. VI. *An Account of a case of Scirrhous Uterus, in which the Cervix Uteri was removed by an operation.* By H. G. JAMESON, M.D. Surgeon to the Baltimore Hospital.

THE case had existed for upwards of four years, attended with bloody ichorous discharges, pains in the back, hips, and

thighs. The patient had suffered greatly; she was not much emaciated, but was afflicted at times with fever, irritable stomach, and hysteria. By an examination made by means of a transparent speculum, I ascertained that there was no disease of the vagina, no ulceration of the uterus, or any part brought into view by the speculum; that the os tincæ was somewhat swoln; and by the touch, that there was a scirrhous hardness, or a peculiar roughness, familiar to those who have been in the habit of examining this disease.

A case had occurred to me within the last two years, attended with many circumstances calculated to call forth my sympathy for sufferings so truly dreadful. Ulceration commenced in the uterus, speedily extended itself to the neighbouring parts, and in a little time the bladder was opened into the vagina, which very soon rendered the patient miserable beyond expression. The English or our own writers, give little information on the subject. Professor Osiander of Göttingen, alone afforded any assistance in this difficulty.

That the uterus might be removed with tolerable safety in part, or even the whole, had been abundantly proven. The similarity between scirrhus of the breast and womb, both in regard to their pathology and termination, when unopposed by surgery, naturally led me to conclude, that as in the former we had little to expect after cancer was fully developed, so the same views would obtain in the latter; and that, as in the former we sometimes succeed in curing even ulcerated cancer, there might be cases of the latter wherein the same happy result might be expected.

The disease was still in a state of scirrhus, confined, as far as the parts could be inspected by the eye, to the os tincæ. The idea that there was ulceration within the uterus, was opposed by the circumstance, that it is a rare occurrence, that the ichorous discharges were not constant, but recurred at uncertain intervals, sometimes of two or three weeks; if there had been ulceration, the discharges would have been constant.

I stated my views to the patient, a coloured woman, aged something above thirty, and who had had four children, and also to her master. I represented to them, that my proposal to operate must be considered in the light of experiment, that I had reasonable hopes of success, or I would not engage in it; but still, there would be some risk of a fatal termination. The sufferings of the patient being insupportable, and the case having been pronounced incurable by several gentlemen who saw her, induced her to hazard it, rather than endeavour to prolong a life which she could not hope to extend beyond the

period of a few months, and even that under increasing sufferings.

On the 7th of May 1824, I operated in the presence of my medical friends; and as this subject is still but little familiar to the profession, and requires further investigation in regard to the best method of operating, I shall expect indulgence for speaking on it somewhat minutely, and the more so, as I am about to criticise a part of my own measures. I had provided forceps which had deep teeth on the outside of their beaks, and made to stand open by means of a screw through their handles. It was intended that the beaks when closed, should be passed into the uterine cavity, and then on opening them they would serve to bring down the uterus; on attempting to introduce them, it was found impervious. I had also in readiness a pretty strong curved needle, armed with narrow tapes, secured in aneurismal forceps. I found the cervix too hard to be perforated with a needle. Being again disappointed, I introduced three tenaculums into the vagina, and hooking one posteriorly, and two laterally, I found no difficulty in bringing the parts affected into view, but not willing to trust to the tenacula, I passed two common suture needles through the lips of the os tincæ, and drew in two pieces of narrow tape—a measure which I now consider wholly unnecessary, as the hooks may be depended on, and are in every respect far preferable to the tapes, as directed by Dr. Osiander. Giving the hooks and tapes to Mr. M'Cay, my immediate assistant, while he kept the os uteri well in view, I passed in my forefinger, and upon it a small scalpel; with this I readily separated the vagina all round from the uterus, except at the anterior part, where I experienced some difficulty. I found that even while a strong tenaculum, and one of the tapes were made to act upon the posterior part of the uterus, that the anterior part of the cervix advanced most readily, and doubling the vagina down before it, prevented me from distinguishing the uterus from the folds of the vagina. I made an incision according to the best of my judgment, but owing to the wrinkled state of the vagina, I cut into the urethra high up: From the pressure upon the bladder produced by drawing down the uterus, a little urine escaped, and convinced me of what I had done—I cut lower. Except this, there was no difficulty in cutting off the cervix. Upon dividing it, there was a considerable gush of blood, but it was momentary. By the finger, I discovered a small indurated mass still attached to the posterior part of the cervix; this was readily removed, without any loss of blood. No induration nor uterus could

now be felt. The part extirpated was greatly hardened, and seemed to be much shrivelled and contracted. On cutting it open, the sides of the cavity were found closely pressed together. The greater part, if not all of the viscus, appeared to have been removed. Its diminished size, and extreme hardness, justifies this conclusion. The bladder, after the operation, lay safely corrugated up under the pubis.

There was no alarming external hemorrhage outwardly, and not more than ten or twelve ounces of blood were lost. But fearing that an internal hemorrhage might come on, after the patient's removal to bed, I thought it best to introduce a sponge covered with alum, as recommended by Dr. Osiander. It excited violent pain; about two hundred drops of laudanum were given in divided doses, before she left the table; notwithstanding the pain continued violent till one o'clock at night (the operation was performed between five and six.) From one she rested pretty well, but before morning she had taken about six hundred drops of laudanum. The stomach was sick at times during the night, though she vomited little.

On the 8th May, the morning after the operation, a pleasant degree of reaction came on, but no urine or fæces passed; twelve ounces of blood were taken, and the urine was drawn off with a catheter. It should have been stated, that for several hours after the operation, she complained of great coldness over the body, but more particularly in the extremities, and was much relieved by the application of bottles of warm water to her feet and sides, aided by warm bathing with spirits over the abdomen. In the morning, however, the vagina felt hot, and also the abdomen, I therefore advised sac. saturn. dissolved in cold vinegar and water to be applied to the belly and pubis. In the evening the pulse was about 100, small and somewhat tense—the tongue was very foul, and there were severe pains in the back, sides, and belly, for which small doses of laudanum were given; the stomach was sick, though there was no severe vomiting. She has been bled twice during the day, about 6 ounces at each time, making in all 24 ounces to-day.

On the 9th, the skin was rather cool, the tongue very pale and foul, with much soreness of the belly at times. She slept tolerably last night, but was sometimes slightly delirious. The pulse was small and tense, the stomach was sick, and excepting the anodynes, every thing was rejected. The bowels have not been open since the operation; she was bled to about 10 ounces in the morning, and an enema was given and her water drawn off. In the evening the pulse was tense and small, amounting to about 100. She still suffers a good deal

of pain, her stomach is quite irritable, and the enema had not operated: strong soap-suds injected into the rectum operated well; the water was drawn off; the effervescing drafts were given, but would not remain. The pain still requires the repetition of opium; the combination with calomel was advised.

10th. During last night she refused taking all medicines except a few drops of elixir vitriol, which had the effect of quieting her stomach. Her bowels have been freely opened again by the soap enema: she had a pretty comfortable night, and her stomach retained a cup of tea. About half a pint of clear urine was drawn off; on the day preceding, it had been bloody and turbid; the pulse was about one hundred, the tongue was more moist and clean; the aspect of the face was better, and the vagina was not remarkably hot; she had a slight chill on the preceding night, for which warm stupes were directed. Being somewhat exhausted by the free operation of the enemas, I omitted bleeding, and advised it during the forenoon, if the symptoms required it. In the evening I found her low-spirited, the pulse upwards of 100, feeble but tense, the tongue, though cleaner, was still very foul; the bowels had been opened, and there was no vomiting; the stomach retained a little milk, and she was bled in the forenoon to about five ounces, and in the evening to about five or six ounces more. I should have mentioned that she was bled twice last night, in all about 10 ounces. I drew off about half a pint of clear urine. She looked more cheerful, coughed a little, and hawked strongly without complaining of much pain: there was no swelling of the abdomen.

11th. She had a tolerable night, some retching and irritability of the stomach; there was some excitement, and she was twice bled to about 8 ounces each time: there was less soreness of the abdomen this morning; she craves butter-milk. I drew off her water, which was clear; there was no preternatural heat of the skin or vagina. Evening—the bowels have been freely open during the day, no swelling; she passed some urine. Her stomach retained the butter-milk; there was no vomiting to-day; the pulse was about 100; the tongue was still foul but moist, and the pulse a little more full, with some pain in the back.

12th. She rested tolerably, but had some fever and pain at one time, for which she was bled to about 8 ounces in the night; she took one small dose of laudanum, but threw it up. She has not vomited since; her stomach was free from pain, and was but slightly sick at times; she took nothing but warm butter-milk, and looked well; there was no swelling of the ab-

domen, and it was not sore upon pressure. She passed her urine this morning, with no remarkable heat in the vagina; the vagina was well washed with weak soap-suds by a syringe. Her bowels were once open this morning without medicine, and twice afterwards by taking a mild enema. In the evening she seemed low-spirited and complained a good deal of internal heat and pains, but has slept during the day; the pulse was about 105, her skin cool, and she passes her urine; she complains of great debility; she attempted to get up to-day, became very weak, and was much pained in consequence of her imprudence. Her tongue was still foul and pale.

On the 13th she had a pretty good night, with some fever; she lost about 8 ounces of blood, and vomited slightly; she took two pills in the night, of one grain opium and five grains calomel each. She had a stool this morning and passed her urine. Her pulse was tranquil and her countenance good. I took away the sponge, which gave a great deal of pain, and after washing out the vagina with warm water by means of a syringe, she felt better. In the afternoon she complained of a stitch or acute pain just above the pubis, which was relieved by warm stupes. She took a few spoonfuls of chicken water and continued her butter-milk; she does not vomit to-day, but is restless when awake, and has slept well during great part of the day. In the evening I found her pulse a little excited and about 120; she seemed restless, but there was no swelling of the belly, and the soreness of it had lessened; the tongue was still pale and foul. She was affected this evening with a sort of tremour, to which she says she is subject; we took about 7 or 8 ounces of blood, which lessened the force of the pulse, but rendered it, perhaps, more frequent and irregular. She tossed a good deal about, and complained of extreme weakness, though she moved herself with considerable strength.

On the 14th she was very low, and at one time in the night she was quite pulseless; the sinapisms were applied; and to-day were given also three pills, each consisting of one grain of opium. Hot stupes were applied; she rested tolerably well after midnight. She vomited a little in the night, and passed some urine, though I found some in the bladder on examining by the vagina. I injected warm water into the vagina, and drew off a little quite clear urine; there was no preternatural heat in the vagina; the urine felt hot, the belly was soft, though not quite so sore; she has had a good stool this morning, her pulse was feeble and about 115. The vomiting in the night was occasioned by tasting some milk toddy. Evening—she has had a restless day, her stomach has retained some

chicken broth and brandy toddy, but rejected some wine which soured on her stomach. She was very weak and a good deal restless, a little wandering. Her respiration good, pulse about 120 to 125, tongue pale and furred, eyes look pretty lively when open, but she is more disposed to lay with them shut and to take less notice. Advised pretty free use of brandy-toddy. Hoffman's drops and laudanum to be thrown up the rectum, warm stupes and sinapisms to the stomach if necessary, and if the anodyne per anum should not compose to rest, to give a pill or two of camphor and opium.

15. She slept nearly all night after having received the anodyne injection; took two pills, one, of opium and two grains of camphor each; also some brandy and water. Early this morning she suddenly became prostrated without any evident cause, and has remained extremely low all day, pulse about 120 in the morning, wanders, but has not vomited. She had an emollient enema this morning, which operated well once, and she passes her urine freely. Evening—pulse about 130, extremely low, insensible and unable to swallow much, but has taken five doses of kinine in Hoffman's drops, with a good deal of brandy and water. She tosses and seems uneasy. Finding much difficulty in swallowing, I introduced a tube through the nose and gave about a gill of chicken soup, which she vomited up with a good deal of bile and brandy; in a few minutes afterwards I gave a dose of kinine and ether in about half a gill of strong brandy and water. She fell into a comfortable sleep and breathed easy for half an hour, when I left her. The pulse seemed rather stronger, but she could not recognize any one. About nine o'clock her breathing became stertorous with extreme prostration, and after much suffering she sxpired at 12 o'clock.

16th, nine o'clock, A. M. an examination was made of the body. The whole of the anterior part of the peritoneum was quite free from inflammation; the omentum was shrivelled up over the colon, much indurated and very dark coloured. The intestines as they appeared upon turning aside the peritoneum were free from inflammation, but a small portion of the intestinum ileum, which lay on the uterus, was somewhat inflamed. The uterus with the ligamenta lata were now dissected out. It was found that I had cut off the whole of the cervix, with the whole of the indurated part—that the body and fundus were somewhat larger than common, which were highly inflamed, as also the broad ligaments. The left ovarium was reduced in size more than one half—was irregularly round and oblong, having the feel of a sac containing a fluid.

Upon laying it open it contained a dark grumous ill-looking tarry substance; the corresponding fallopian tube was natural, but contained a portion of whitish pus. The right ovarium was still more shrivelled, and felt like an empty sac—laying it open, its inner surface was striated with streaks resembling the substance in the other ovarium. Its fallopian tube was much enlarged. The structure about the morsus diaboli on both sides was very blackish, and presented a sort of unnatural striated appearance.

Tracing the lower portion of the peritoneum, it was seen that much inflammation had crept along that part of it which lay near the ureters up as far as the kidneys, and then extending up over that portion of the peritoneum covering the kidneys, at this part on either side there was an extent of some inches greatly inflamed. The kidneys were unaffected, as also the stomach, liver, and mesentery, except that part of it which lay contiguous to the pelvis. The ureters were not inflamed, though their surrounding cellular structure was so. The pelvic cavity contained a small quantity of pus—the bladder looked tolerably well, being less inflamed than the uterus and its appendages. The uterus, with the exception of being somewhat enlarged and inflamed, was healthy, and it is manifest that the singular disease of the ovaria was the principal seat of her sufferings, and gave rise to the peculiar symptoms attending the case, both before and after the operation.

REMARKS.

Candour requires that I now enter into a brief exposition of my reflections on the foregoing case. From the circumstance that the uterus falls down into the vagina, and sometimes nearly on the outside of the vulva, I was induced to believe that there would be no difficulty in bringing the uterus so low into the vagina as to enable me to pass behind it a ligature by means of the double canula and wire, and thus cut out the whole uterus; I accordingly prepared myself for putting this plan into operation. Osiander* justly remarks, that "scirrhus and cancer of the womb, begin almost always on the external orifice of the uterus and proceed from thence to its body, and often before the disease has destroyed half of the womb, death puts an end to the agonies of the sufferer." But

* Edinburgh Medical and Surgical Journal, vol. xii. His first operation was in 1801, and up to 1808 he had operated 9 times, successfully; in one of the cases the disease returned, and he operated successfully the second time.

"when the cancer spreads from the orifice of the womb down into the vagina, which it often does, no use is to be expected from excision." The reader will have observed here that in my case, the disease, so far as could be ascertained by a transparent speculum, was confined to the cervix uteri. It may also be observed that it was upon the suggestions of Osiander that I changed my plan of operation from that of attempting the removal of the uterus, to the excision of the indurated part. And I have to acknowledge that, although there was no attachments more than natural, still I could not have applied the ligature, and therefore did not attempt it. Whether this can be safely done remains to be decided, admitting its practicability sometimes. In this case it is clear that I cut away all the indurated part, and the presumption is that the patient would have survived and recovered had the ovaria been in a healthy state. I deem it important to remark here, that the patient seemed to have suffered extremely from the styptic, and the inflammation was no doubt increased by it. I am decidedly of the opinion, that where we do no more than remove the cervix, we have not much to fear from hemorrhage, and that a piece of dry sponge pressed up against the cut surface will, in all probability, restrain the bleeding. We are encouraged by the fact of the scirrhus being still confined to the cervix, although the disease had existed four years, to hope that whatever may be its duration, if there be no ulceration nor other evidence of its extension, we may expect a favourable issue; and that in this case the unfavourable termination of it was chiefly owing to the cancerous state of the ovaria, all which is supported by the appearances on dissection.

Intending to investigate the surgical anatomy of the uterus, I shall here close my remarks, and hope that if this paper has no other effect, it will in some degree excite attention to the subject.

REVIEWS.

Quidquid venerit obviam, loquamur
Morosa sine cogitatione.
MARTIAL.

ART. VII. *Dublin Hospital Reports and Communications, &c.* Vol. III.

The following facts conclude this most interesting series of practical facts and observations.

1. *Medical Report of the Whitworth Hospital House of Industry; containing an Account of Dysentery, as it appeared in the latter end of* 1818. By J. CHEYNE M.D. F.R.S. Ed. Physician General to his Majesty's Army in Ireland.

2. *Observations on the Acute and Chronic Dysentery of Ireland; containing a Historical View of the Progress of the Disease in Ireland; with an Enquiry into its Causes; and an Account of its Symptoms and Mode of Treatment; with a Report of Selected Cases.* By JOHN O'BRIEN, M.D. Fellow and Censor of the King and Queen's College of Physicians in Ireland; and Physician to the Fever-Hospital and House of Recovery, Cork and Dublin. 8vo. pp. 100, Dublin, 1822.

FAITHFUL reports of epidemic diseases are very useful, as they enlarge the mind by acquainting us with the modifications produced by climate, modes of life, classes of society, and constitutions of the air. These reports *ought* to have the effect of guarding us against placing implicit confidence in a remedy because it has been successful in one epidemic, and of condemning it, because it has not proved all-powerful in another. Yet the reverse of this salutary effect is not unfrequently experienced; such is the waywardness and weakness of the human mind.

It need not be stated that dysentery has proved a great scourge in our camps, fleets, and even in our cities, at times. In England, however, it has not prevailed to any great extent,

in an epidemic form at least, for a good many years. Not so in the sister kingdom. In the course of the last five or six years, we are informed by Dr. O'Brien, this disease has been more frequent and fatal than usual in Dublin, and generally throughout Ireland. It was the precursor, and has continued the survivor of the late epidemic fever of that country. In its complications with the fever, it aggravated that disease, and greatly augmented the mortality. It appears, from medical and historical records, that Ireland has always been considerably obnoxious to this form of disease. Sydenham entitles the flux to at least the second rank among the *leaguer* sicknesses of the seventeenth century in that unhappy country; and Walker, in his history of the siege of Londonderry, gives a lamentable account of the havoc produced by dysentery, both in the garrison and in James's army. Dr. Cheyne found, on examining the records of the Army Medical Board in Ireland, that dysentery has much decreased among the troops of that country within the last twenty years; doubtless, on account of the great improvements in the barrack and hospital system. It appears from the same records, that the English and Scotch regiments generally suffered on their first coming to Ireland with this disease.

The patients admitted into the Whitworth Hospital, under Dr. Cheyne, "were frequently of worn out constitutions," and had co-existent organic diseases, which, of course, rendered the cure more difficult. That it was, in the present instance, rather one of the forms of the prevailing epidemic fever, than genuine idiopathic dysentery, such as we meet with in the hotter regions of the earth, will appear probable from the following statement of Dr. Cheyne.

"Very often dysentery arose during convalescence from fever, in which case I several times ascertained that the preceding fever was not attended with any unusual gastric or enteric irritation. Sometimes the disease commenced at the termination of fever, and then it was at first so slight as to appear like a salutary crisis, its only symptoms being mucous stools with a degree of uneasiness at the termination of the rectum. Frequently the disease arose in the course of fever. Nausea, mucous or bilious vomiting, tenderness of the epigastrium, and deep yellow suffusion of the skin, characterized many fevers which occurred in the autumn of 1818; and when symptoms of dysentery took place before those of fever ceased, first, there were borborygmi and tormina, then mucous and bloody stools, and tenesmus, the character of fever being gradually lost, as that of inflammation of the mucous membrane

of the great intestines was established; but from the peculiar nature of the fever of the season, it was sometimes difficult to mark the precise time when the new disease commenced. The bilious fever of the autumn, continued till near the termination of winter, consequently it existed as long as the dysentery was prevalent in the Hospitals of the House of Industry. When the symptoms of bilious or gastric fever were exchanged for those of dysentery, probably an extension took place of the irritation from the mucous membrane of the stomach and small intestines, to that of the large intestines; hence borborygmi and tormina, as they occur in affections of both portions of the intestines, were not sufficient to mark the change in the disease, till they were attended by mucous bloody stools, then indeed the case no longer admitted of doubt." 17.—*Dub. Hosp. Reports, Vol. III.*

Dr. Cheyne, indeed says, that the disease was often *apparently* unconnected with the prevailing fever, and then it was assigned by the patients to cold, damp, hardships, &c. At page 19, he remarks that fever and dysentery were frequently converted one into the other; and that it seemed as if the contagion of fever, from some modifying condition of the system, "may have produced at one time fever, at another dysentery." These circumstances must be carefully remembered when we come to speak of the treatment; for it would be highly unfair, as well as unphilosophical, to expect the same results from particular remedies under the above circumstances, as where there was no epidemic constitution, no contagion, no fever, and no broken down constitutions.

"In almost every patient," says Dr. Cheyne, "of whose case we obtained a distinct account, whether the disease arose from fever, or was unconnected with it, a remarkably foul taste was complained of, such as often exists when there is a deficiency of bile in the intestines; considerable flatulence also existed, then rigor took place, which was the commencement of pyrexia: there was a case or two, in which the rigor took place after symptoms of dysentery were established. In a few cases, nausea occurred as one of the earliest symptoms; in a few, tenderness of the belly; in several, a severe lancinating pain in some of the abdominal regions, generally in the umbilical, or even lower; but in the common course of things, the rigor was followed by gripings, a frequent inclination to go to stool, with a desire to continue the effort, by which the bowels are emptied, and to these symptoms there was soon added a feeling, as if the effort had been unproductive or incomplete; as if there was still something remaining in the bowels; the skin

was dry and hot, sometimes pungently so; the stools from the first were loose, perhaps not immediately undergoing any other change in their appearance, but in general they were mucous, and in rather more than one half of the cases, there was a discharge of blood on the very first day of the disease." 20.

After most diligent enquiry, they "could not discover that scybalæ were passed by any one of the patients." We wonder indeed how the idea ever could have been entertained that scybalæ were in any way connected with dysentery; for in nineteen cases out of twenty, no scybalæ will be seen, in any climate, or in any form of the disease. This has not been a harmless error. The search after these imaginary matters in the bowels, or rather the anxiety to dislodge them, has led to a cruel and injurious system of purgation in dysentery. In the discharged matters, we observe Dr. Cheyne enumerates almost every kind of secretion and excretion, healthy or morbid, except bile.

"In many respects," says Dr. Cheyne, "the dysentery of 1818 resembled that which has been described as occurring in tropical climates.* As in the latter variety, so in the former, the functions of the liver and skin were disordered from the commencement of the distemper, and continued thus until its termination. The skin was remarkably unyielding, and, if we may judge by the appearance of the stools, the biliary secretion was often suspended for many days."—Reports, p. 22.

Dr. Cheyne's prognosis was unfavourable in proportion to the degree of tenderness in the abdomen, pain, frequency of stools, fever, "and more especially quickness of pulse." It was very difficult to accertain whether, and to what extent, there was ulceration of the mucous membrane. When the disease continued twelve or fourteen days, considerable emaciation usually came on; and when to this was added a haggard look, with quickness of pulse and abdominial tenderness, there was little hope of recovery.

"A harsh, dry, opaque, dirty looking skin, a florid, clean, varnished tongue, vigilance, a hollow eye, and pallid, wasted, faded cheek, a desire to go to stool immediately after drinking, pains in the knees, and cramps in the legs, fits of dyspnœa, a tendency to œdema and ascites, belong to a more advanced stage, but not to the last, which was characterised by extreme emaciation, supine posture, involuntary stools, a thin reddish secretion flowing without check, sordes on the teeth, hiccup, tendency to delirium, difficulty of swallowing, and a pulse like a thread."—Cheyne, p. 23.

* "Johnson, p. 354."

At one time a majority of Dr. Cheyne's patients died, who had been ill more than six or seven days, and of those who were emaciated scarcely one recovered.

"Dysentery was productive of several forms of dropsy,—ascites, and anasarca in particular; and it is worthy of remark, that a swelling occurred in several of the patients, both males and females, resembling the phlegmasia dolens in all respects but in its connexion with parturition. In one or two cases symptoms of hydrothorax were observed."—Rep. 25.

There was sometimes a translation of disease to the lungs, with a degree of effusion in the cavity of the pleura, and blood in the air cells, evinced by oppressed respiration, pain in the chest, a short teazing cough, scanty mucous expectoration, constant jactitation, small pulse, colliquative perspirations, and great prostration of strength.

The dissections made at Whitworth Hospital presented the diseased appearances "chiefly in their commencement, or after the morbid action had run its course." Death scarcely ever took place while the disease was in its intermediate stages. The development of the symptoms therefore which belong to the commencement of the ulcerative process must be ascertained by succeeding pathologists.

"The mucous membrane of the stomach, and small intestines, sometimes presented an inflamed appearance, which, in general, became more remarkable as we approached to the great intestines; then ulceration began to show itself, at first superficial, afterwards laying bare the muscular fibres of the intestines; the ulcerations became larger, more numerous, and deep, as the rectum was approached; but it was remarked that the last three or four inches of the rectum were sometimes pretty sound. The peritonium was found less diseased than might have been expected." 29.

The deaths which took place in an early stage of dysentery, were from fever or some other fatal disease. When this was the case, "a peculiar state of the mucous membrane of the stomach and intestines was noted."

"This membrane was found of a more or less deep red or purple colour; it was rather thickened, soft and pulpy; the least violence destroyed the continuity of the surface, which had lost its healthy smoothness, was uneven, and not unfrequently rough and granulated, the blood-vessels being enlarged and loaded with blood: where the alteration in texture was inconsiderable, there were numerous spots of a deep red colour, which at first resembled extravasations, but, on close examination, seemed to be blood-vessels, ramifying in an arborescent

form, and connected with veins. The stomach contained a viscid mucus, firmly adhering to its coats, and mixed with an opake yellow, or whitish matter; the contents of the large intestines were fluid, and of a yellowish green colour." Cheyne, p. 29.

Dr. Cheyne relates an interesting case of complicated fever and pneumonia, where dysentery supervened four days before the patient's death.

"She had a lancinating pain in the abdomen, tormina and discharge of blood by stool; symptoms, which were relieved by caster oil, followed by compound powder of ipecacuanha. The most interesting part of the dissection was the display of a highly vascular state of the whole of the mucous membrane of the intestines, without ulceration or erosion; proving that a free discharge of blood may from this, as from other mucous surfaces, take place without previous ulceration or erosion." 30.

Three or four other cases, presenting *nearly* similar appearances, are related; and they are extremely valuable, since dissections in the early stages of dysentery are very rare, for very obvious reasons. It is only indeed during epidemics like this, where dysentery forms one of its complications, that such dissections can be got at. Dr. Cheyne caused preparations to be made from the intestines of dysenteric patients, and these are preserved in the Whitworth Hospital. They may be divided into two classes—those in which the intestine is thickened, and those in which it is not. In the first class may be seen specimens of the mucous membrane increased in vascularity, without abrasion or ulceration—the same membrane covered with coagulable lymph—the membrane simply abraded, its epidermoid coat removed—the membrane ulcerated, the intervening portions natural—and, lastly, the mucous membrane partly ulcerated, partly covered with coagulable lymph. In the second class, where there is no thickening, we have the following varieties. The mucous membrane simply abraded—the same ulcerated, the intervening spaces natural—the mucous membrane rugous and ulcerated—the same ulcerated and filamentous, hanging in shreds as if sphacelated—the membrane partly ulcerated, partly removed, exposing the muscular coat. "In many of these preparations the mucous membrane, when not eroded or ulcerated, is covered with an exudation of coagulable lymph."

In a majority of cases the liver was apparently sound in structure; but in a good many instances remarkably other-

wise. "In a considerable number of bodies it was in a state of great sanguineous congestion."

Dr. Cheyne properly remarks, that it is a great error to suppose that a disease admits of only one mode of treatment. In the course of the season, the practice of the Whitworth Hospital underwent several changes—their confidence in certain methods of cure fluctuated, being sometimes weakened by experience, "and then restored by experience still more extensive."

"For example, the treatment by means of mercury did not succeed so generally as I expected. Calomel and ipecacuan; the blue pill and ipecacuan; doses of five grains of calomel and half a grain of opium, at stated intervals of four or six hours; larger doses of the same medicines, a scruple of calomel and two grains of opium—all these methods often failed when the disease was established, not only with me, but with some of my colleagues, who treated the disease in the fever wards; and yet I have no doubt that the mercurial treatment is entitled to confidence, although probably not to the same degree of confidence that it is in other climates." 41.

We recommend the following passage to the serious consideration of those of our brethren who have not witnessed dysentery on a large scale.

"The doctrine pretty generally taught with respect to the nature and treatment of dysentery did not apply to the form of that disease, which is under consideration. We are told that, before dysentery has long continued, the fæces are formed into compacted masses, and that the patient complains of a load in his intestines, with which they feel oppressed. The only complaint of this kind, which I heard, was of a sensation as if the lower part of the intestines had not fully discharged its contents, producing tenesmus. We are directed to give purgatives, until the load felt by the patient shall have been removed, and we are told that purgatives have not performed their office until, by removing scybala, the cause of this sensation is removed, a rule which it is plain cannot apply to a disease in which there are no scybala. Indeed that theory of the disease, which supposes the symptoms of dysentery to depend upon an accumulation of indurated fæces, will require to be reconsidered, when perhaps it will appear in this, as in other cases, that one of the effects of disease has been mistaken for its cause. In many instances purgative medicines seemed greatly to increase all the sufferings of the patient, and castor oil, the cathartic to which a preference is usually given, frequently roused the dormant griping pain, so that it

appeared that its right to be preferred in this disease, now almost prescriptive, had been too hastily conceded. Finally, we are often cautioned against venesection, which was certainly the remedy the least equivocal in its effects, the most uniformly useful of any which we employed in the Whitworth Hospital." 42.

Of the cases not attended with much fever or pain, and which were admitted during the first few days of the disease, a purgative early in the morning, ten grains of Dover's powder early in the afternoon, and the same at bed-time, with low diet, restored many to health. "But in several of these cases the disease *spontaneously ended*, as the concurrent fever often did, in free perspiration." This consideration, as our author wisely observes, was calculated to "reduce reliance on this plan within just limits." When the disease assumed a more inflexible character, and was attended with considerable pyrexia, tenderness of the abdomen, muco sanguineous stools, tormina, and tenesmus, our author would prefer to the mercurial treatment, the old proceeding of venesection, saline purgatives, warm bath in the evening, and lastly an anodyne diaphoretic at bed-time.

When with pyrexia, the stools consisted chiefly of bloody mucus, and the abdomen was very tender, blood-letting was never omitted, and the symptoms were greatly mitigated thereby.

"But there were cases requiring a procedure still more decided; cases wherein the disease had resisted the foregoing method so long, as to excite an apprehension of extensive ulceration, or in which it began with unusual violence, or in which, after proceeding moderately for a time, symptoms of great danger suddenly arose; as for instance, intolerance of the slightest pressure, agonizing pain, unceasing tenesmus, great pyrexia; in these cases the method recommended by some of the late writers on tropical diseases,* was used with advantage. In the course of a single hour the patient has been largely blooded, has taken two grains of opium, and a scruple of calomel, has had the warm bath, and been swathed in flannel,† by which means we have obtained breathing in time to pursue our plans more deliberately. Were the same cases again to be placed under my care, I would not hesitate to prescribe opium in doses of four or five grains, as it was the opium chiefly, which seemed to me to arrest the progress of inflammation, and whatever in such a case procured respite for

* See Dr. Johnson's work. † See Mr. Dewar's work.

the patient from agony, sometimes proved of permanent benefit. After the large dose of calomel and opium, calomel in doses of five grains, with half a grain of opium, every third or fourth hour, was given till it produced ptyalism; as soon as the mercurial influence was apparent from the state of the mouth, the mercurial was laid aside, and a mixture with balsam of capivi* was given every fourth or sixth hour, from which the greatest relief was often obtained; the fæces, from being of a bottle green, and mixed with mucus (the effect of the calomel and opium) and passed with tenesmus, became more natural in appearance, and were voided less frequently; the patient considered himself cured, and in many cases his recovery followed, although not without interruptions, requiring various changes in the form of the anodyne; such changes, it may be observed, were generally productive of benefit; thus the chalk julep, or catechu mixture, with laudanum, when the capivi draught lost its effect, were substituted. It results from a consideration of the cases in my possession, that venesection, calomel, and opium, followed by the capivi mixture, with farinaceous diet, proved more successful than any other method which was adopted in the severest cases; yet it often lamentably failed, of which sufficient evidence will be found in the table of unsuccessful cases. It ought not to be forgotten, that when the skin was restored to a natural state by the mercury, the case generally proceeded favourably." 45.

Although mercury failed in many cases, and was, as might be expected, injurious in the ulcerative stages of the disease, yet venesection was beneficial not only at the beginning of the disease, but even after it was supposed that ulceration had commenced.

At one period in the Whitworth Hospital, when the medical officers began to lose confidence in every measure, not even excepting the mercurial treatment, a physician proposed cream of tartar as a remedy that would cure all cases of the disease. Although little was expected from such a measure, yet, in such desperate circumstances, it was fairly and fully tried, by the physician himself. The dose to an adult was half an ounce of the powder finely levigated every fourth or sixth hour. It was soon discovered that this medicine "failed in many instances," but it was admitted "that some patients who took it were restored to health, who, Dr. C. thinks, would have sunk under any of the modes of treatment then in use." The "white powders," therefore, became rather a favourite in the

* See Dr. Pemberton's work.

hospital thenceforward. In some it occasioned much distress, and several individuals refused to take it. "But when persevered in, it often brought down bile, and then by giving it only once or twice in the day, and alternating with it Dover's powder, the capivi, or chalk mixture, and using the baths, the cure was completed." We have remarked that, in almost all cases of dysentery, the *function* of the liver is torpid or impeded; at least, the biliary secretion appears exceedingly scanty. This, we conceive, is an important feature in the pathology of the disease, and was not till lately known, or at least promulgated. We are happy in having the corroborative testimony of such a man as Dr. Cheyne on this point.

"In the property of bringing down bile, I think it must be admitted that the cream of tartar excels most other purgative medicines, and in this way, its efficacy in dysentery may probably be explained, for that the suspension of the biliary discharge is a very important part of the disease, few will deny, who have seen the great relief which sometimes, in this disease, follows a discharge of bile." 49.

Castor oil, so generally beneficial in idiopathic dysentery of the hotter climates, did not, as was before observed, agree with patients in the epidemic under review. But when half an ounce of the oil was combined with ten or twelve drops of laudanum, the combination was found to be an invaluable medicine. When castor oil also was combined with the rectified oil of turpentine, it operated with less pain than when given without the latter medicine. "This, which is also a valuable combination, borrowed from puerperal practice, and much used in Dublin, sometimes effectually reduced that tumefaction of the belly which often so much distressed the patient." Injections composed of superacetate of lead and opium, in solution, ranked high in the Whitworth Hospital. Dr. Barker has given, with success, this combination internally in dysentery. For the cases and dissections, thirty in number, we must refer to the volume itself.

When we consider that the disease in question was complicated with, indeed, we might say, it was a *form* of, the prevailing epidemic fever, that it occurred among the lower orders of Dublin, notorious for squalid poverty, filth and intemperance, we ought not to wonder at the occasional want of success attending some measures found highly efficacious under other circumstances; especially among men in the prime of life, in our army and navy, where the disease was instantly recognized on its first appearance, and treated vigorously. Still, with all the disadvantages attendant on Dr. Cheyne's

patients, his report goes, in the main, to confirm what has been inculcated by our naval and military practitioners, during the last ten or fifteen years, in respect to dysentery. The interrupted or defective function of the liver, the corresponding state of the skin, the non-appearance of scybalæ, the amelioration produced by an increase of the biliary secretion, the safety and utility of bleeding, and the general efficacy of opium and mercury, are all substantiated by the said report. All we wonder at, is, that the measures did not more frequently fail, under such circumstances, than actually happened.

Dr. Cheyne has appended a supplement, containing an account of dysentery, as it appeared in the 79th regiment, at Limerick, in the year 1821, drawn up by Dr. Perston, assistant surgeon of that corps. The prominent feature in this dysentery was the following:—

"The liver was invariably deeply engaged in disease; in general considerably enlarged; and its whole structure apparently destroyed. In two cases the surface was then studded with yellowish white spots, which, on cutting into them, were found to contain pus, and yellow purulent matter was found in distinct cells throughout its whole extent. The concave surface commonly presented a livid aspect, and was indurated. The gall-bladder usually nearly empty." 89.

Dr. Perston used active depletory means, and "in all the severe forms of the disease, after premising general evacuations, and when the inflammation was checked, mercurial frictions were ordered over the region of the liver." "I was led," says Dr. P. "to try the effects of the remedy, in consequence of having witnessed that the structure of that viscus was more or less destroyed in every fatal case of this disease, though it had been specially remarked, that no feeling of pain,—not even a sense of weight or uneasiness, had been referred to that organ by the patient." Although, in several instances, our author attributes the recovery of his patients to these frictions, yet he did not find them so extensively beneficial as he had anticipated. We wonder he saved a single patient; for where the biliary organ was so generally implicated in structure as in this dysentery, no time should have been lost, *from the very beginning*, in the introduction of mercury by the mouth, as well as by the skin. It is thus that remedies are frequently injured in reputation by the injudicious modes of their administration! We cannot take leave of Dr. Cheyne without expressing our great esteem for his candour, zeal and ability in the prosecution of all his professional researches.

We now come to the second work at the head of the article. Dr. O'Brien has gone more formally to work than was necessary, by inquiring into the definition, history, and ancient literature of dysentery. There was surely no need for this, in order to give the public an account of a recent epidemic. But too many writers fall into this practice. Being rather undecided as to contagion, Dr. O'Brien thinks that Cullen's definition ought to have "aliquando" introduced before the adjective "contagiosa," which would render it, he thinks, unobjectionable. Our author, however, has never seen any instance where the disease was unequivocally propagated by contagion. He supposes it possible, that when the disease is epidemic in camps, ships, crowded hospitals, or populous cities, "the attendant fever may assume a malignant and typhoid character, and the disease become contagious." To us it appears evident that *dysentery* is not contagious; but that *fever*, having a determination to the *bowels*, may be so, the same as a fever with a determination to the lungs or brain.

In respect to the *causes* of the late epidemic dysentery in Ireland, our author has reason to consider them the same as those which gave origin to the epidemic fever. The seasons were wet and inclement, the crops had failed, and hunger and wretchedness prevailed. The consequence was disease in various shapes.

"In this state of things the dysentery appeared in Dublin, in 1817, and has since continued with some short intermissions, to maintain its ground, to an extent unknown for the last fifty years. The predisposing and exciting causes are clearly pointed out, in the extraordinary combination of physical evils above described. The visible agents in operation, during the prevalence of this malady, were famine, and want of every description which, probably, operated as predisposing causes; and secondly, cold, excessive moisture, and unwholesome food, which appear to have been the exciting causes." *O'Brien*, p. 18.

Our author states that he has not been able to trace that connexion between dysentery and disease of the liver so much insisted on by some writers on tropical diseases. Dr. O'Brien is led into the same misapprehension that many others have been led into, by confounding disordered *function* with diseased *structure*. The best writers on tropical dysentery have observed *impaired function* of the liver in the dysentery of hot climates, and we appeal to Cheyne's and to Perston's papers just reviewed, for a corroboration of the same in the dysentery of Ireland. Our author offers a curious reason why the liver

is not concerned in dysentery—"neither are the discharges tinged with bile, but, on the contrary, the disease seems to be attended with an opposite condition of the liver, or *a deficient secretion* of that fluid." If this be not functional disorder of the biliary organ, we know not what is. It is the precise functional disorder too which is insisted on as obtaining in tropical dysentery, so much has Dr. O'Brien misunderstood the writers in question. He has himself supplied the proof of their accuracy of observation. Into another error has Dr. O'Brien fallen, namely, that cholera is produced by a redundant secretion of bile;—an error that has been abundantly exposed of late years, as our readers well know.

"The salutary agency of mercury, in dysentery, seems to have strengthened the theory of its hepatic origin. But, it must be recollected that mercury exercises a powerful influence over the cutaneous and mucous surfaces also, restoring them to their healthy state, with a more rapid and evident agency than perhaps any other medicine: its power in the cure of cutaneous diseases, and in the inflammation of mucous membrane of the larynx, and, in fine, its general action as a diaphoretic, sufficiently prove its direct action on those surfaces." *O'Brien*, 22.

As to the structural disease of the liver, even that was pretty frequently observed in the late epidemic, according to our author's own observations. The *facts* being thus ascertained, we have no objection to our author's *explanation*, as thus propounded:—

"There is no doubt, however, of the co-existence of dysentery and disease of the liver in a multitude of instances; and the most rational explanation which suggests itself of the reciprocal influence of the two diseases on each other seems to be the following:—Persons labouring under previous disease of the liver, become affected with debility and turgescence of the mucous coat of the intestines, in consequence of an impeded and repelled circulation in the diseased liver, which more readily disposes them to fall into the dysenteric state, on the application of the exciting causes formerly mentioned. In such cases disease of the liver must be considered merely as a predisposing cause; and that it is frequently one there can be no doubt." 22.

The remote causes, Dr. O'Brien, in common with the best observers, attributes to "sudden variations of temperature," acting on organs predisposed to disease by intemperance and unwholesome food. The occult state of the air, so often mentioned but never yet explained, our author does not deny, but

thinks we had better leave this epidemic constitution out of the question, and confine ourselves to those causes that are obvious to the senses. To this it may be objected, that the obvious causes are not always adequate to the explanation, and then the mind reverts necessarily to some hidden agency.

"However authors have differed concerning the remote causes of dysentery, there seem no grounds for doubting that its proximate cause is inflammation of various degrees of intensity, affecting the mucous membrane of the intestines, chiefly the large intestines. This fact has been amply proved by dissection, by which either inflammation or some of its sequelæ, as stricture, ulceration or thickening of the mucous membrane, have been invariably detected. A close analogy may be traced between catarrh and dysentery, and the production of both diseases may be accounted for in a similar manner. It is a long established principle in pathology, that all those causes which produce a suppression of the cutaneous perspiration are capable of generating catarrh. The principal of them is cold, by which the perspiration from the skin being checked, is thrown inwardly on the mucous membrane. It must be remembered that the skin and mucous membrane are continuous surfaces, and readily sympathise with each other. Hence the rapid translation of the excretions from one surface to the other, and their reciprocal action in a state of disease. The afflux of blood to the mucous membrane produces in that organ an inflammation of greater or less activity, according to the violence of the exciting causes, and thus the phenomena of catarrh arise. On the same principle may the phenomena of dysentery be explained, making allowance for the different nature and uses of the organ affected in this latter disease. It has been generally observed by practical writers, that the period most favourable for the production of dysentery is when a cold moist autumn succeeds a warm dry summer. Under such circumstances, it is probable that the skin acquires, from excess of heat and transpiration, a morbid state, which renders it more sensible to the succeeding winter's cold. If cold be then applied primarily to the lower part of the body, we can readily trace the connection between cause and effect, and the mode of operation, if dysentery be the consequence.

"When, under such circumstances, some important viscus, as the liver, happen to be diseased, and its circulation obstructed, the passage of the blood through the vena portæ is impeded, and that fluid thrown back on the mesenteric veins and arteries, causes a kind of habitual turgescence, or sub-inflamma-

tion in those vessels. If, in this state of things, the cutaneous perspiration be interrupted by cold applied to the abdominal region, the balance of the circulation will be still further deranged. The circulation will diminish on the surface, and increase in the cavities, and by a uniform law of the animal economy, the loss of the healthy discharge on the surface will be compensated by a morbid one in the interior. If the serous membrane be the weaker organ, dropsy may be the result; if the mucous, dysentery." 30.

Dr. O'Brien here takes an opportunity of differing from Dr. Johnson in respect to the proximate cause of dysentery. There is not, however, so much real difference of opinion between them as Dr. O'Brien imagines. Dr. Johnson does not deny that a state of inflammation is an early condition in dysentery, but he contends that inflammation is not the *first* link in the chain of morbid action. He maintains, for instance, that the functions of the liver, and glandular viscera of the abdomen are disturbed—that the balance of the circulation and of the excitability is next thrown on the mucous membrane of the intestines, where a state of *irritation* first obtains, and if that be not quickly removed, a state of inflammation, and ultimately ulceration ensues. This attempt of Dr. Johnson's to trace out those phenomena of dysentery which precede actual inflammation has been, by several, misconstrued into a denial of the existence of inflammation in the disease. Certainly it is Dr. Johnson's belief that the inflammation is a sequence or consequence of other previous morbid states, irritation for instance, and therefore can hardly be called with strict propriety the proximate cause of the disease. As, however, it universally obtains when the disease has become well established, there is no objection, in a practical point of view, to consider the inflammation of the mucous membrane as its proximate cause.

Dr. O'Brien's description of the symptoms of dysentery need not be entered on here. We observe that he still believes in the existence of scybalæ, in dysentery, though he acknowledges that they cannot be considered in the light of one of the causes of the disease, and that he has never observed them on dissection. That indurated fæces may happen to be lodging in the cells of the colon when dysentery attacks a patient, and that they may be dislodged and discharged in the course of the disease, there can be no manner of doubt; but that to this accidental circumstance should be attached any importance, we are inclined to deny.

From the principles laid down by our author, (the inflam-

matory,) it follows, of course, that the antiphlogistic treatment must form the basis of the cure.

"In the execution of this plan the two great objects which it is necessary to keep in view are—to restore the functions of the skin,-and to unload the mesenteric system of its excess of blood. That blood-letting is a remedy calculated to fulfil these indications, but particularly the latter, there can be no doubt; in the first stage of dysentery I conceive it may be administered with as much confidence, and to as great an extent as in most of the phlegmasiæ. In almost all the cases of dysentery which I had an opportunity of treating in the early stages of the disease, within the last three or four years, I have employed venesection freely, and have uniformly witnessed its good effects in mitigating the tormina, lessening the frequency of the discharges, and allaying febrile excitement." 43.

Where general bleeding dare not be carried farther, the local bleeding by leeches is recommended. It is rather curious that, if dysentery consist in neither more nor less than inflammation of the mucous membrane of the intestines, venesection should not be able to cure it, as it unquestionably has cured many other phlogoses. Let us hear Dr. O'Brien's sentiments.

"By the opinion which I have stated in favour of this remedy, I by no means wish to set it up as an infallible cure for this disease; on the contrary, I much doubt if it has ever succeeded by itself, or if it is capable of succeeding in curing the disease, *as it often succeeds in others of the phlegmasiæ.* It appears to me that blood-letting ought to be considered only in the light of a useful auxiliary to the other modes of depletion hereafter to be mentioned, and as applicable principally, if not solely, at least in its general form, to the early stages of the disease." 44.

The next remedies on our author's list, are "sudorifics and purgatives combined with opium."

"The mercurial salts, James's powders, and Dover's powders, are the principal medicines of this class applicable to the cure of dysentery: four or five grains of calomel, with as much James's powder, and a grain of opium, may be given every third or fourth hour, or even more frequently, according to the exigence of the case. This plan being pursued for the first twenty-four hours of the curation, ought to be succeeded in the next twenty-four by the purgative plan. With respect to this, however, no fixed rule can be laid down; in very urgent cases I would prefer continuing the medicines above

mentioned, and exciting the mercurial action as rapidly as possible, rather than waiting for the more doubtful and tardy benefit to be derived from purgatives. The purgative which I most frequently employ is the old fashioned one of castor oil and tincture of rhubarb. This purgative is certainly preferred by most patients, and appears to operate with less irritation than the saline purgatives. Occasionally a few drops of the tincture of opium are added to lessen its irritation." 45.

The author we believe to be correct in asserting that the combination of calomel and opium is inferior in efficacy to that into which antimonial powder enters. The latter combination, viz. "calomel, opium, and antimonial powder," Dr. O'Brien "has no hesitation in pronouncing the most powerful anti-dysenteric remedy we possess in the dysentery of this country;" and, he might have added, of most other countries too. Speaking of the various specifics which have been lauded in dysentery, our author remarks—

"The truth is, no single medicine deserves the name of a specific in this disease; but, of all known remedies mercury certainly approaches nearest to that character, and possesses the most decided control over this disease. Its beneficial agency appears to be exerted in restoring the functions of the liver, and promoting the mesenteric circulation in the first instance, and secondly, in restoring the healthy action of the skin itself. That it is adequate to effect important changes in the skin, will readily appear when we recollect its powerful influence in certain cutaneous diseases. In many instances it exerts its salutary agency before it reaches the point of salivation; in others the signs of amendment are delayed until it has arrived at this point, immediately after which, the dysenteric symptoms subside and convalescence commences." 47.

It is hardly necessary to remark that even this remedy will not always be successful, in all times, places, and stages of the disease. "I think," says Dr. O'Brien, "I may venture to affirm, however, that, if timely administered, it will succeed in a very great majority of cases. The failures which take place in this medicine, arise partly from the late period of the disease at which it is administered—a circumstance which must frequently occur in hospital practice."

Dr. O'Brien conceives that emetics have *undeservedly* fallen into disuse since the mercurial plan has become fashionable. This, we think, is true. Emetics are very powerful means of determining to the surface, and restoring the lost balance of the circulation. Sudorifics are universally allowed to be important remedies in this disease. The warm bath is

obviously indicated. Our author makes some judicious observations on flannel bandages, counter-irritants, opiate injections, the mineral acids, &c. for which we must refer to the work itself.

Chronic Dysentery. Under this head Dr. O'Brien includes all those cases protracted beyond a duration of five or six weeks, and which are generally unaccompanied by fever, unless of the hectic kind. This form of the disease, which is usually, but not always, a sequel of the acute, is the more intractable of the two, and by far the most frequently met with in hospital practice. "The most numerous sufferers, indeed, from chronic dysentery, are the aged and infirm who have previously suffered from diseases of the liver and other abdominal viscera."

"The symptoms of chronic dysentery vary in degree, according to the violence of the previous disease, and the extent of the structural injury sustained by the intestines from a simple relaxed state of the bowels, producing diarrhœa, to a permanent ulceration, continually pouring forth purulent matter. In the milder cases the least exposure to wet and cold, or the slightest errors in diet, are succeeded by a diarrhœa, accompanied by gripes and tenesmus. In the more severe cases, the causes just mentioned are succeeded by a flux nearly constant, at least recurring at short intervals, of a fetid sanious matter, resembling the washings of raw flesh. On inspecting the discharges in those cases attentively, streaks of pus are evidently discernible on the surface of the ichorous matter discharged, which contains little of the substance, or even smell of natural fæces. In some cases the discharges are as black as pitch, in others they are in the opposite extreme of a dirty white colour, resembling the coagulated mucus of the nose, or dirty cream. This last appearance is characteristic of the last stage of very protracted dysenteries." 58.

This deplorable state will sometimes last for months, the patient gradually wasting away as in the last stage of phthisis pulmonalis—indeed, this disease might almost be termed "phthisis intestinalis." The appetite generally continues, and is sometimes ravenous; but indulgence in food always aggravates the complaint. In most cases where the disease had continued long, in our author's experience, the liver was found affected extensively.

Morbid Anatomy of Dysentery. The structural derangements found on dissection have been, of course, the products of inflammation, and inculcate the important lesson that our

exertions should be directed to the prevention or subjugation of this state. In all the cases which Dr. O'Brien examined, one or other of the following appearances presented—ulceration or abrasion of the mucous membrane of the intestines—the colon, in every instance, thicker and more contracted than natural through its whole extent, but particularly at its lower flexure, where it bends over the ilium to form the rectum. Our author did not find the small intestines ulcerated, "but patches of a deep red colour were generally discovered here and there, especially on the ileum."

"In one case, the whole of the intestines presented a compact mass of adhesions, the small intestines adhering in several places to the peritoneum. In this case, the transverse arch of the colon, the duodenum and the stomach, were firmly united together by adhesions. In this case also, the liver, the middle lobe of which extended two inches below the ensiform cartilage, was converted into a mass of tubercles of the large kind." 63.

In a majority of instances the liver was unaffected, the large intestines being the seat of the disease. The gall-bladder was always found distended with deep brown or dark yellow bile. "The mucous membrane (of the large intestines) was either obliterated or converted into a pulpy, bloody slime, which on being scraped off, presented an uneven surface, studded with small indurations, which no doubt were the mucous glands."

Treatment of Chronic Dysentery. The most essential part of this consists undoubtedly in dietetics, which ought to be of the mildest and most bland description. The experience of our author verifies that of Pringle, in respect to the utility of a milk diet. "The patient labouring under chronic dysentery should be placed altogether on a diet of milk and vegetable mucilage, as rice, arrow-root, sago, salep, &c." Flannels next the skin are absolutely necessary; the warm bath twice a week, using the flesh brush afterwards; a change to a warmer climate, if the patient live in this country; and to a colder, if a resident between the tropics.

Treatment. Where the patient is able to bear the operation of an emetic at the beginning, Dr. O'Brien thinks it advisable to administer one; but if contra-indicated, then the bowels are to be unloaded of their acrid contents by gentle laxatives.

"A draught composed of castor oil, tincture of rhubarb, balsam of Copaiba, and a few drops of tincture of opium, has been generally directed by me under those circumstances; the purgative being repeated at longer or shorter intervals, as the case might seem to require." 71.

Dr. O'Brien's principal efforts have been directed to restore the functions of the skin and the abdominal viscera. With this view, sudorifics, combined with opium and a general mercurial alterative, were exhibited.

"The benefit of a slight alterative course of mercury will be apparent, when it is recollected how frequently disease of the liver is combined with inflammation and ulceration of the internal surface of the intestines in chronic dysentery. The former materially aggravates the latter, and forms a part of the general disease. Every measure, therefore, which tends to produce a healthy biliary secretion very considerably forwards the cure." 71.

These anodyne mercurial diaphoretics being continued a few days, are omitted, and alternated with astringents. "In slight cases, the mistura cretæ, with tincture of opium and tincture of catechu or kino (the common astringent mixture of hospitals,) answers very well." In severer cases, our author has used a solution of alum and sulphate of zinc, in cinnamon water, with tincture of opium. Oil of turpentine was tried, without producing any good effect. The patients described it as producing racking pains in the bowels, and giving no respite from the disease. The balsam copaiba, however, appears to have proved a valuable remedy; and the best medicine for correcting its nauseous taste was found to be milk, with which it mixes by means of sugar. If a few drops of any essential oil be added, the mixture is rendered still less disagreeable. The superacetate of lead did not succeed in our author's hands. The arsenical solution in two or three cases seemed to act as a powerful tonic to the system. In the following passage we agree with our author, and can vouch, from some experience, for its truth.

"Of all the remedies which have been employed for the cure of chronic dysentery, perhaps opium is the most universally remedial, and that which may be relied on with most certainty, as affording relief to the sufferers from this disease. In most of the anti-dysenteric compounds of former and modern times, it makes an important ingredient, and is the only efficacious one in many of them. In many instances there is little doubt but it has effected a cure, and in those where it has failed, it has considerably prolonged life, or soothed the bed of death." 75.

For the selected cases and dissections we must refer to Dr. O'Brien's work.

We may just say a few words on chronic dysentery before we close this article. We have seen a good deal of the dis-

ease, and we have personally felt it. The main pillar of the treatment is *rigid abstinence.* In nine cases out of ten, where such organic disease has not taken place as renders all remedies abortive, we verily believe that the patient might cure himself of chronic dysentery by a resolute system of starvation and perfect quietude. If a man were to live on one small meal of farinaceous food in the day, and keep to his bed, he would do more than medicine can effect, without this precaution. But medicine may be of great assistance. A couple of grains of blue pill every night, with three or four of antimonial powder, and one or two of opium, will be very serviceable, taking a spoonful of the cretaceous mixture with opium or aromatics, *post singulam sedem liquidam*, for this is the only rule that can be laid down. Astringents we have often employed, and often with advantage; but if there be any hepatic disease, we would advise caution in their exhibition.*

ART. VIII. *A Case of unusually large Aneurism of the right Axillary Artery, in which the Subclavian Artery was tied.* By CHARLES H. TODD, Esq. Senior Surgeon to the Richmond Surgical Hospital. Octavo, p. 13. Dublin, 1822.

OUR surgical brethren are well aware, how few successful cases (or even attempts) there are on record of the kind now before us. We conceive, that next to the aorta itself, the subclavian artery is the least accessible to the ligature, especially in the living subject, and where disease has deranged all the relative position of parts. Mr. Todd is entitled to the greatest praise for his intrepidity and dexterity in an operation of such tremendous difficulty and danger.

The patient (John Dundas) was 53 years of age when he entered the Richmond Hospital, on the 21st of January of the present year. He stated, that he had been uniformly healthy and temperate till early in June 1821, when he felt a stiffness and numbness in two of the fingers of the right hand, which, in a month, was attended with inability to close the fingers. The hand then, and ultimately the arm, became œdematous. In October of the same year, he perceived a small tumour in the axilla, which rapidly increased, attended with weight, pain and pressure. He went first into the Fermanagh Infirmary, and from thence was transported to the Richmond Hospital.

* Johnson's Journal for June 1823.

The aneurism, at this time, not only distended the axilla, so as to cause the scapula to project considerably backwards, but it was very prominent anteriorly; its base extending upwards to the clavicle, inwards to the edge of the sternum, downwards to the nipple of the breast, and on the side of the thorax, to the upper edge of the sixth rib. The tumour was tense, elastic, and pulsating; the skin feeling stretched upon it, but not discoloured; slight pressure did not give pain; but the patient complained of deep-seated uneasiness. The whole extremity was œdematous, and the elbow separated to a great distance from the side. No pulsation could be perceived in the radial or ulnar artery of the diseased limb, but there was little diminution of animal temperature.

On the 25th of January, the pain of the arm was so intense, and the size and pulsation of the tumour so much increased, that venesection and opiates were necessary. No permanent advantage being gained by any means pursued, it was determined to have recourse to the operation, which was performed on the 8th of February, in the presence of several surgeons of the Irish metropolis. We deem it proper to give the steps of the operation in Mr. Todd's own words.

"The patient was placed on a table, lying on his back, with the upper part of his thorax somewhat raised; his head and neck inclined to the left, and his right shoulder as much as possible depressed by an assistant steadily drawing down the arm of that side. A slightly curved incision was made through the common integuments across the lower part of the neck, commencing about two inches above the acromial, and terminating half an inch above, and to the outer side of the sternal extremity of the clavicle. The convexity of this incision was downwards, so that by a little dissection of the integuments upwards, a small flap was made, which afforded ample room for the subsequent stages of the operation, and evinced the inutility of a more extensive, or a more complicated division of the skin.

"The next part of the operation consisted in dividing the platisma myoides, fascia, and subjacent cellular tissue; this occupied a considerable time, in consequence of the great number of veins which it was found necessary to secure with ligatures. The external jugular, and two or three other superficial veins were easily secured, but a series of more deeply seated veins proved extremely troublesome; one branch of these in particular poured out blood in an alarming quantity, and receded so much within the layers of the fascia, that I was at last compelled to use the needle, and to include in the liga-

ture the portion of fascia with which the divided vein was connected.

"I feel it incumbent on me here to state, that this profuse discharge of venous blood was chiefly the consequence of the veins having been divided too near the large trunk into which they opened; the blood therefore flowed freely in a retrograde direction from the subclavian vein into them, and issued from their inferior orifices; the bleeding from their superior orifices was inconsiderable and easily controlled. To have tied these veins individually, before dividing them, would have been an undertaking both tedious and difficult to execute, for they constituted a most intricate plexus of convoluted vessels imbedded in cellular tissue and layers of fascia.

"The venous hemorrhage having been at last effectually suppressed, I proceeded to search for the omo-hyoideus muscle: so much however was the relation of parts altered by the magnitude of the tumour, and consequent elevation of the clavicle, that the portion of this muscle expected to be brought into view in this stage of the operation, was situated more than an inch below the clavicle; and it was found necessary to draw it up from its concealment, and to cut it across, that the subjacent parts might become accessible.

"Having applied my finger to the edge of the scalenus anticus, I was directed by it to the situation of the artery; but at this juncture causes of further difficulty arose, chiefly from the great depth of the wound, and the doubt which the almost total absence of pulsation in the artery naturally excited in regard to its identity. It is necessary however to observe, that this obscurity in the pulsation of the subclavian artery was by no means referrible to the debility or exhausted state of the patient, but probably depended on the vessel having been flattened upon the first rib by the degree of extension to which the aneurismal tumour in the axilla had subjected it.

"For some time I could not be convinced that the feebly pulsating vessel, to which the point of my finger was applied, was really an artery of such magnitude as the subclavian; and aware of the disappointments which others were reported to have sustained in this operation,* I resolved to satisfy my-

"* See Sir Astley Cooper's case in *Lon. Med. Review*, vol. ii. and Dr. Rutherford's account of M. Dupuytren's unsuccessful operation at the Hotel Dieu, in *Edin. Med. and Surg. Journal, No.* 63.

"An eminent English Surgeon, then on a professional tour, was present at M. Dupuytren's operation and dissection, and favoured me with an acconnt of them, which corresponds with that given by Dr. Rutherford. In the same letter (dated June 21, 1819,) he states that, 'three days since a surgeon of

self and my assistants upon a point of so much importance, before a ligature should be applied. The depth of the wound rendered it impossible to see to the bottom of it, accordingly, I kept the point of my left fore-finger on the vessel, and cautiously detached it from its connexions with the blunt extremity of a director; and having then introduced the fore-finger of my right hand also into the wound, I succeeded in compressing the vessel between the ends of my fingers, when the pulsation of the tumour immediately ceased, returning when pressure was discontinued. This expedient was conclusive, and, for obvious reasons, more satisfactory than that of pressing the artery downwards against the first rib.

"From the unusual degree of displacement of the clavicle, it was expected that great difficulty would have arisen in the application of the ligature to the artery; I was therefore provided with the several instruments which have been recommended to facilitate this step of the operation, however none of these were employed, as the object was speedily effected with a common aneurism needle. At first I attempted to pass the needle in front of the artery, with the view of giving every security to the vein; to this the position of the clavicle constituted an insuperable obstacle; I therefore directed the needle along the margin of the scalenus, and then insinuated the point of it under the artery from behind, guarding the vein with the fore-finger of my left hand, until the point of the needle was sufficiently elevated. I was then enabled to seize the ligature with the extremities of my fore-fingers, which I had introduced into the wound, nearly in the same manner as when compressing the artery, and the needle being held by an assistant, one end of the ligature was drawn out anteriorly, and the needle was removed.

"The artery then lay upon the ligature; and I requested that my assistants, and such other professional gentlemen as could conveniently approach the table, should convince themselves of this fact, by making the most accurate examination. The knot was now tied, and a sufficient tightness ensured by the ends of the ligature having been passed in the ordinary

great celebrity attempted this operation, on a most admirable subject, and in an early stage of axillary aneurism, but he could not even find the vessel, and abandoned the operation.'

"Mr. Samuel Cooper informs us, that one of the cervical nerves may be mistaken for the subclavian artery, in consequence of the pulsation of this vessel being communicated to all the adjacent parts; and that he has seen a mistake of this kind actually made by very skilful surgeons. *First Lines of the Practice of Surgery, vol.* I. *p.* 319."

way through the serre-nœud. On the ligature being tightened, the pulsation of the tumour entirely subsided; its tension was considerably diminished, and the patient felt an increased degree of numbness of the arm; the external wound was then dressed, and he was laid in bed with the limb supported on a pillow by his side." 9.

The patient did not appear much exhausted, notwithstanding the loss of venous blood during the operation. At night an opiate was administered, and, for the first time, since his admission into the hospital, produced tranquil and refreshing sleep. On the following day, there were no alarming symptoms, and the tumour was obviously diminished. There was some dyspnœa towards the evening, which was relieved by venesection. These attacks of dyspnœa recurred frequently, and frequently required bleeding and digitalis, with aperient medicine. The symptomatic fever which succeeded to this painful operation, was inconsiderable. On the 14th of February the wound was dressed for the first time, and the sutures removed. On the 15th, several ligatures came away—the discharge being small and healthy. The œdema of the limb had greatly subsided—no pulsation could be distinguished in any of the arterial trunks—the temperature of the limb had continued at 96°—the pulse at 92°. We cannot pursue the diurnal reports. On the 3d of May, when the paper closes, the man's "amendment has been most satisfactory;—the tumour is still further reduced, and he is gradually regaining the power of the muscles which move the arm on the scapula. The joints of the wrist and fingers have lost much of the unnatural laxity, and the integuments of the hand no longer possess the diseased appearances reported on the 20th of March."

We need hardly say, that this operation exhibits one of the most splendid triumphs of modern over ancient surgery. It must be received as a strong testimony in favour of the expediency of tying the subclavian artery, even under circumstances of peculiar difficulty and danger.*

* Johnson's Journal for Sept. 1822.

ART. IX. *Transactions of the Surgeon Apothecaries. Vol.* I.

The History of a Case of Spontaneous Rupture of the Uterus in the Seventh Month of Pregnancy. By CHARLES SHILLITO, M.R.C.S. and of the Society of Apothecaries.

RUPTURE of the uterus, during labour, is one of the most unfortunate and melancholy occurrences that can be met with in practice. The fatality which almost invariably attends instances of this nature, evinces the insufficiency of our art; and whilst the feelings of the medical attendant are wounded in witnessing agony he cannot mitigate, his character too often suffers from the malignancy of prejudice, or the falsehood of ignorance. Happily, however, such accidents are rare; for nature has most admirably guarded against them, by causing the *tenacity* of the womb to increase with its distention, and its *strength* with the burden it has to bear.

The subject of this communication was housekeeper in an opulent family, in her 43d year; corpulent, but active:—had borne several children; and had a capacious and well formed pelvis.—One evening, in the 7th month of her 12th pregnancy, after more than usual exertion, symptoms of labour appeared; some trifling gushes of blood escaped, and the motions of the child were strongly felt. The os uteri was found rigid, and admitting only the point of the finger.

No regular labour pains occurred until the following morning, when *two* very severe ones were experienced. The os uteri a little more dilated, but still hard. The patient complained of a heavy weight and coldness in the abdomen, and general uneasiness. The third day was ushered in by a rigor, followed by fever, intermitting pulse, increased restlessness, acute pain on deeply breathing, and tenderness and tumefaction of the abdomen, which increased with the day, attended by delirium, furred tongue, and anxiety of countenance. Dr. Merriman, who was now consulted, passed two fingers through the os uteri, and discovered a rent in the posterior part of the cervix. On the 4th day, Dr. M. got three fingers into the uterus—it was very much contracted, and contained only coagulated blood. A discharge, like lochia, took place on the 5th day, and spasms about the abdomen, bilious motions, copious vomiting of dark viscid secretion, rapid and intermitting pulse. These symptoms became more urgent, but were

met by bold and judicious treatment; and the woman appeared to rally a little. A profuse discharge of dark, offensive, grumous matter continued to flow from the vagina until the 12th day, when a large quantity of water, with some pus, and the membranous part of the placenta with the funis, were discharged, after an attack of abdominal spasm. The child could now be plainly felt, through the muscles of the belly, resting on the brim of the pelvis from ilium to ilium. The patient was nearly in a state of syncope; her respiration was convulsive, and her pulse small and fluttering. "I got down," says Mr. Shillito, "some volatile alkali diluted; also, by tea-spoonfuls, strong brandy and water; and on her recovering a little, I took the opportunity of introducing my hand, with the navel-string for a guide. I found the os uteri apparently gone, and one common opening to the abdomen, and I felt a hand of the child low in the pelvis. After again supporting my patient by more stimuli, I a second time introduced my hand. I got hold of the feet, and, after half an hour's perseverance, being a little inconvenienced by the intestines pressing greatly upon my wrist, every movement of my hand causing eructations of wind, I extracted a perfect male fœtus in a discoloured and very putrid state, of the usual size of seven months growth. For several days after delivery, symptoms were as favourable as they could possibly be under such circumstances;—appetite, sleep, and strength appeared returning; but a change for the worse took place, and the poor woman sunk on the 25th day after the rupture of the uterus, and on the 12th after the delivery of the fœtus."

A minute description of the post mortem appearances is given by Mr. Shaw, with his usual accuracy. We must confine ourselves to that part of it most peculiarly connected with the case before us. The fœtus was found in a cavity beneath the peritoneum. "When the cavity was fully exposed, it appeared to have been of a size corresponding to the bulk of a seven months fœtus. Its boundary on the upper part was formed by the adhesion of the left side of the arch of the colon to the abdominal muscle, extending in a line from the umbilicus to the 11th rib. The inferior boundary was formed by the natural reflection of the peritoneum from the fundus of the bladder, and which, on the left side, was continued up to the 11th rib, in connexion with the abdominal muscles; while on the right side, the sac was closed by condensed peritoneum running from the umbilicus to the fundus of the bladder, so that the sac was confined principally to the left side of the abdomen. The posterior boundary was formed by the

agglutination of the peritoneal surface of all the small intestines by masses of lymph."

"The vagina was not ruptured, but near the os tincæ it was in rather a sloughy state; only one half of the os tincæ was found, the other part having apparently sloughed off. The uterus was twice the size it is generally, in the unimpregnated state. The fundus and greater part of the body covered with the thickened and inflamed peritoneum; in other respects they appeared to be quite natural: but the left side of the os tincæ, of the cervix, and of part of the body of the uterus, appeared to have sloughed off, so that there was a direct communication between the cavity of the uterus and the sac in the abdomen. When the hand was passed into the vagina, if it were carried directly up, it entered into the sac in which the fœtus had lain, but by being directed laterally it passed into the uterus."

Mr. Shillito confesses he had no idea that the uterus was ruptured during the first forty hours of his patient's illness: but had such a circumstance been ascertained beyond a doubt, the rigid and contracted state of the os uteri precluded the possibility of relief by instrumental or manual interference.

The question, "Is it proper to deliver by artificial means in cases of ruptured uterus, or leave them to the efforts of nature?" has divided the opinions of writers on midwifery. Denman and Burns think every thing should be left to nature; whilst Dewees asserts such a procedure to be highly improper, and to diminish very much the chances of the patient's recovery. It appears to us, that both these opinions may be correct, each being the right one to follow under certain circumstances: and that, in adopting the one or the other, the medical man must, as in many other doubtful points of practice, be guided by his own judgment and experience, and the peculiarities of the individual case he has to do with.

Three plates are subjoined to this paper, illustrative of the morbid appearances discovered on dissection.

On the Treatment of Painful Affections of the Nerves, arising from Local Injury. By George R. Rodd, Esq. Surgeon, Hampstead, M.R.C.S.

Neuralgic affections are amongst the most distressing and painful complaints to which the complicated structure of man is liable, and often resist every remedial measure that theory,

ingenuity, or experience can suggest. Mercury, steel, arsenic, lead, bark, opium, conium, stramonium, and belladonna, are but a few of the substances administered, here and there with success, but in very numerous instances, without any.

Mr. Rodd has been fortunate enough to relieve several cases by the external application of a strong watery solution of belladonna to the skin, over the affected nerve. In one instance the disease, which appeared to originate from a blow on the part, was in the sciatic nerve extending from the hip to the foot—almost immediate relief was afforded by rubbing the course of the pain with two drams of the extract of belladonna dissolved in an ounce of water. The pain never recurred with much violence, and the woman got quite well by small doses, combined with extract of bark, and a blister at the back part of the thigh. Another case was that of a female, who suffered excruciating pain in the course of the sciatic nerve after parturition. It resisted every thing for six weeks, until the belladonna was applied.

Mr. Rodd thinks, that the weak and delicate who have suffered from hæmorrhage or other debilitating discharges, are most liable to painful affections of the nerves; and, that during a paroxysm, the function of the nerve is interrupted, which accounts for a thrilling sensation characteristic of this complaint. Pressure on a nerve will sometimes give rise to a derangement of its functions. Mr. R. suffered from this himself, from wearing a tight ring—of course, where its seat is beyond reach, no assistance can be derived from local applications.

Narrative of an unusual Case of Utero-Gestation, in which the premature Expulsion of one Fœtus preceded, by two Months, the Birth of a Twin Fœtus, at the full term. By W. Newnham, Esq. Surgeon, Farnham, Surry.

In this instance a fœtus of seven months, with its placenta, were expelled from the uterus, still born, and another which remained behind, came away fifty-nine days after, being its full time, alive and well.

Mr. Newnham does not consider this as a case of superfœtation, but that two ova were impregnated at nearly the same time. It is an admirable provision of Nature, in cases of twins, that a dead fœtus should be an irritant to the uterus, cause it to take on the expulsive action for its exclusion, and then remain at rest to perfect the living one. The practical inference drawn from this narration is, that in premature labours where

one fœtus is expelled we would not hasten the delivery of the other by any means, but tranquillize, and leave all to nature.

Cases Illustrative of the Efficacy of the Colchicum Autumnale. By G. WALLIS, M.D. and late of Emanuel College, Cambridge.

EVERY medicine must be tested by extensive experience and careful observation before its value can be justly estimated: we find, however, as Dr. Wallis observes, that when a remedy becomes *fashionable* it is administered by the generality of practitioners "without reason and judgment," in all cases of disease, however opposite in their symptoms, and not being attended with universal success, it is condemned and discarded. This has been the case with many a valuable article of the materia medica, whose qualities deserved a better fate.

Dr. Wallis considers the powers of the colchicum, to be to diminish the excitability of the brain and nerves, and to lower the action of the heart and arteries. The powder is the form he has used it in. In a case of what is generally called rheumatic gout, seven grains combined with Dover's powder, administered every four hours, acted like a charm. Two cases of "hysteritis" from suppressed menses, which resisted the most active measures, readily yielded to this remedy. In pneumonia, pleuritis, phthisis, incipient hydrocephalus, and diabetes, it has been of infinite service. In this latter disease, its control over the urinary secretion was "extraordinary and intermediate," reducing it from three gallons, to its natural quantity, in two days.

On the Treatment of a Peculiar Lameness produced by a Failure of the Arch of the Foot. By THOMAS HADEN, Esq. Derby.

This lameness results from a defect in the arch, formed by the tarsal bones. From a weakness of the ligaments which bind these together, the arch gives way, the ancle sinks, the instep becomes flattened, the point of the heel raised, and the fore part of the os calcis, where it joins the astragalus, is depressed:—in some instances so much as to touch the ground. In consequence of this, the foot loses its elasticity, the toes are turned outward in progression, and the gait becomes laboured and awkward.

In treating this affection "nothing answered so well as broad strips of adhesive plaister rolled over each other, so as to form

a compress of the proper width and thickness, and bound on the foot by means of other strips of plaister; the whole being fastened on and kept tight by a roller, or what is better, a laced stocking, or ancle-piece." "This will give no pain, if it be made flat enough at first: indeed, in the course of a day or two, it becomes a great comfort to the wearer. It should be changed once a week, and the compress then enlarged. This may be done by rolling the strip of plaister used to keep the compress in its place, on the old compress itself, and the increase of size thus given will generally be found the proper one for the time."

On the Treatment of Club Feet. By T. HADEN, Esq. Derby.

THE treatment of this deformity has engaged the attention, and exercised the ingenuity of many. The knowledge of the surgeon has been aided by that of the mechanic, and yet how little success has attended their efforts! It is probable this may be accounted for by the various opinions which have existed respecting its cause. Mr. Haden attributes it in many instances to the pressure of the uterus in the last months of pregnancy. Ulcers of the foot, fractures of the leg, causing the patient to keep the part in an unnatural position, or injuries to the ancle joint, may produce this distortion.

The following is Mr. Haden's method of treatment. "For an infant, take a strip of plaister an inch broad, and nine inches long, place one end of it on the outside of the foot; carry the plaister over the middle of the instep, and down under the foot, so that it shall cover the end which lies on the outer edge of the boot, then twist the foot strongly, so as to turn the sole outwards instead of inwards, and secure it in that position, by carrying the plaister round the inner ancle to the outside of the foot. This plaister must be changed *every day*, and be farther kept in its place by means of a roller. Moreover, it is necessary at night to put both on the inside and outside of the leg and foot a strong splint of pasteboard, like a leg for drying stockings on shaped at the bottom to the foot, and reaching up to the knee. These splints are to be removed every morning." Thus applied, sticking plaister will generally be sufficient for the removal of this deformity, as it answers every indication required, allows the limb to be moved in any direction, and is free from the weight and inconvenience of the more complicated apparatus. Some instances are mentioned of patients up to six years of age, who were cured in a few weeks.*

* Johnson's Journal for March, 1824.

ART. X. *Annual Reports of the Directors of the Glasgow Asylum for Lunatics, for the years* 1814, 1815, 1816, 1817, 1818, 1819, 1820, 1821, *and* 1822.

THE Asylum for Lunatics at Glasgow comprehends 136 apartments, destined for the accomodation of 120 patients, who are distributed into classes according to their sex and sphere of life, and according to the degree of their insanity. A similar distinction is observed in the grounds for exercise and airing, to which each class is separately admitted.

Nine annual reports of their transactions have been published by the directors, with the laudable object of submitting the progressive state of the Asylum to general observation.

From these Reports it appears; 1st. That the males exceed the females in number, as 391 to 292, or nearly as four to three, a disproportion not usual in other Asylums; 2nd. That, in both sexes, the disease becomes less and less curable in proportion to its duration; out of 258 old cases, 34 cures only were accomplished, whereas no less than 226 out of 435 recent ones were cured: hence appears the necessity of placing insane persons as early as possible under proper treatment; 3d. That the relative curability of male and female lunatics, is very uncertain, and not materially different: out of 391 males, there were 150 cures, and 110 out of 292 females; and 4th. That a continued series of such lists, will furnish data for comparing the success of different institutions with each other; but, for this purpose, say the Directors, the peculiarities of each must be fairly stated: for example, many of the largest Asylums in Britain, after the trial of one year, regularly dismiss all the patients not cured at that time; but here, with a few exceptions, the incurables continue accumulating from year to year, and persons are admitted under every form and complication of the disease, and even though apparently near death.

We extract miscellaneous observations taken from the nine Reports, according to the order in which they were originally submitted to general inspection.

A. 1814.—This Report is solely occupied with statements relating to the civil economy of the Asylum, and the admission of its first inmates, in the last month of the year.

B. 1815.—Here, we find some useful suggestions on the employment and office of keepers. The system of locking up pa-

tients for hours together, or of putting them in chains whenever the keepers cannot attend, has no place in this institution. Under such a system an asylum puts on the appearance of a jail, instead of being a dwelling of comparative comfort. No person is confined here, but for a fault, or to prevent mischief, when any one shews signs of becoming outrageous. To find keepers properly qualified and to keep them so, has always been, and always will be, the most difficult part of the very difficult task allotted to those who manage an asylum. Besides activity and strength, perfect sobriety and unremitting vigilance, a keeper should have a quick apprehension to discern the first approach of a paroxysm, great decision, and the greatest humanity. Such qualities, however, do not often meet in one character; and, when they do, their possessor can generally find a station equally lucrative, and more agreeable than the irksome attendance on the insane. Besides the weariness of confinement, his temper is put to the most severe trials. He is frequently exposed to personal assaults; every peculiarity about him is mimicked; his features and dress are caricatured on the walls; he is often assailed with the most cutting sarcasms and virulent reproaches, which seem prompted by malignity of heart more than want of understanding. Hence, he requires the greatest self-command to suppress resentment, and to refrain from punishing those who are so much in his power, and where he has so many chances of taking revenge without detection. The unhappy lunatic is generally reckoned undeserving of credit: having been found guilty of innumerable exaggerations and much falsehood, he is not believed even when he speaks the truth; whence, under the very eye of men of much penetration, of strict honour, and great humanity, the most shocking abuses have, in some cases, continued for years without being discerned.

With reference to the permanency of the cure of lunatics, the subsequent remarks occur. It is certain that all are liable to relapse, just as one who has had an ague this spring, is liable to relapse next autumn; but this is no good reason for saying that agues cannot be cured, or that it is idle to make the attempt. It is certain, also, that many are ready to relapse after stated intervals, unless particular care be taken to break the morbid habit, and to avoid the exciting causes of derangement; but it is no less certain that many long subject to derangement, have continued free from it for many years, and that the number of complete permanent cures has, of late, increased greatly, under mild treatment, especially in houses

where it is not the interest of any one to prolong the residence of the patient.

C. 1816.—In this report, we meet with some thoughts on a subject, in the discussion of which much ingenious speculation might be exercised. It is to be regretted, that the eloquent author of the paper (Dr. Cleghorn) has declined favouring us with his own views on this intricate subject. It is difficult to apprehend, we are told, and more difficult to explain, the principle on which the demolition of furniture should give ease to the mind of a madman; for, all the while, he knows a chair and a table to be what they are, and he knows also that they belong to one who supports him with much difficulty, and who, far from being able to replace what he destroys, can hardly keep up the present scanty stock. On some occasions, indeed, reasons quite absurd, but somewhat intelligible, are given for such an outrage. Some, becoming suddenly frantic, break to pieces every thing that can be broken in their apartments, because they think the articles might be much better made; others, because they deem it not only allowable, but commendable, to encourage trade in unpropitious times. As the love of strong drink can be restrained only by keeping it out of the madman's reach, so the propensity to breaking cannot, in many cases, be restrained without a degree of confinement hardly compatible with health.

D. 1817.—Some observations occur in this paper, on the effects of drugs, when administered to the insane, and on the loathsome practice of forcing aliment into their stomachs. Among others, we find the statement, that it has been observed, with emphasis, by some reporters of diseases in towns and dispensaries, that the reports of most institutions are searched in vain for *medical* information. Reports like this, however, are quite unfit for *medical* disquisitions; but the time may yet arrive when facts ascertained in this Asylum, together with the practice found most successful there, and the inferences which should be drawn from the facts and the practice, will be laid before the public in a proper form.—The difficulty of ascertaining the real effects of drugs is great in every disease, and particularly so in cases of insanity, on account of its peculiar nature. In the opinion of the best judges, medicines have been given improperly in this, as often as in any malady; and they have got the credit of cures which they seem to have had no share in producing. There is, indeed, great reason to suspect that, in many instances, cures have been ascribed to drugs which, though prescribed by the physician, and carefully furnished by the apothecary, were never tasted by the patient. There are,

no doubt, some persons, both in mad-houses and out of them, who think themselves neglected if they do not get regularly a portion of drugs: to all these, medicine ought to be promptly furnished. Others dislike it so much that they refuse not it only, but for fear of it their food also: to such, therefore, no medicine is given except on the greatest emergency, and then concealment of it in their food, or persuasion has always ensured its exhibition. As to the horrid custom of forcing it, as well as food, down their throats, under which some have been choked completely, others thrown in convulsions, and all more injured by the violence used, and by their own furious opposition, than they could possibly be benefited by the operation of any drug whatever, it (forcing) *has never been permitted in this Asylum.*

E. 1818.—We are told here, that it has been said, "none but a madman would reason with a madman;"—a most equivocal maxim, oftener founded on apathy, indifference, and carelessness, than on superior discernment. In fact, as men of sound mind are occasionally less under the influence of motives than they ought to be; so the least sound, while short of idiotcy, still feel the influence of motives in no inconsiderable degree, and it is impossible to fix with precision the point, at which motives lose their influence so completely as not to be worth urging. A long chain of reasoning is, no doubt, out of the question; but a short argument, a sententious maxim gravely stated, or an aphorism delivered with solemnity, especially if in the language of scripture, often produces a sudden calm amid the most furious commotions, and leaves durable effects. When a religious melancholy madman was loudly avowing and vindicating his intention to commit suicide, the very first opportunity, his hand was taken kindly, and in a solemn tone he was reminded of the awful consequences of such a deed, "as no murderer hath eternal life:" on which his eyes, formerly glaring with phrenzy and despair, were turned towards the ground; he appeared absorbed in fixed thought, and made no more mention of suicide. This man afterwards declared, with much emotion, that whenever the temptation recurred, the text always came along with it, uniformly shielding him from its baneful effects.

F. 1819.—The following hints relative to the medical economy of the Glasgow Asylum are found in this report. The treatment of the patients has been varied according to the features and the causes of their lunacy.—Internal remedies have, in a few instances, been of great service; but, in general, medicine has been of little avail. The warm bath, sometimes

conjoined with the affusion of cold water on the shaven head, has been much used, and often with advantage. Some patients have derived benefit from the cold both. Exercise, especially in the open air, has been of general utility, and much good has been done, in several cases, by pretty severe bodily labour. Rotatory motion, by means of a whirling chair, has of late been tried in a great number of cases, and, in some of them, with wonderfully good effects. By the contrivance used for this purpose, the degree and duration of the motion are completely under command. The operation is always performed in the presence of the physician, and in no instance has it been followed by any of those formidable symptoms, which have sometimes occurred in other institutions, where a more simple, but much less manageable apparatus was employed. In some instances of unusual docility, benefit has been obtained from attention to certain rules of mental discipline. But the moral management of the patients, by the usual means of restraining their violence, of correcting their evil habits and propensities, and of regulating their conduct and behaviour, has been of more general utility than any other practice employed. These means, however, are often found to be of little avail, unless those by whom they are used, besides gaining complete ascendency over the patient, gain, at the same time, his confidence and good will.—One of the frantic patients, by forciby striking his head against the wall of his apartment, had a part of his scalp torn up, so as to expose to view a large portion of his skull. He lost a great quantity of blood; but, by proper treatment, the wound readily healed. It is remarkable, that after this accident,* the state of the patient's mind gradually improved, and, in the course of two months, he was dismissed perfectly cured. Another frantic patient accidentally received a similar wound, and soon after, in like manner, recovered.

When outrage is committed, the discipline of the Asylum requires that the offender should be put under restraint. But this is done with the least possible severity, and with due at-

* From this fact, two deductive suggestions seem naturally to present themselves to the inquirer's mind: 1st. That the patient's insanity was not a primary affection, but the consecutive result of morbid action in one of the encephalic organs; 2nd. That counter-irritation and sanguineous depletion changed this morbid action, relieved the lesioned organ, and ultimately terminated the man's intellectual malady, by rebalancing those cerebral functions, from derangement of which his lunacy did evidently proceed. It may, therefore, be matter of useful investigation, to determine the manifestations of mental disease, on which an imitative substitute for this *accidental* treatment shall operate with equal success.

ention to health and comfort. The keepers are under the strictest rules, insomuch, that none dare confine a patient without an order of the physician or superintendant; and they are prohibited from using opprobrious, or even passionate language, in the discharge of their duty. Striking, beating, or in any way maltreating the patients, is totally inadmissible: ny keeper found guilty of such cruelty would be instantly dismissed, perhaps otherwise punished, according to the enormity of his offence. For the purpose of rendering any refractory patient more docile, the securing of his hands or confining him to his apartment, is the means usually employed, and is seldom found to be long necessary. During favourable weather, the patients are placed in the airing grounds occasionally, and almost all of them daily; and, sociality is often promoted, while the irksomeness of confinement is alleviated, by various occupations and amusements.

G. 1820.—This Report informs us that, in regard to the treatment of lunacy, much still remains obscure. In many cases, little good can be done, but it is of importance to know enough, if possible, not to do harm; and, in order to acquire this knowledge, some experience is necessary. Many patients have been judiciously treated before being sent to the Asylum; but some, even of considerable standing, have not been at all under medical care, or, being placed at inconvenient distances from their proper medical attendants, have been committed chiefly to the care of persons not sufficiently skilled in the treatment of the disease. Violent measures are still too often employed, where milder, judiciously conducted, would be more effectual. Powerful drugs, also, and irritating applications, are not unfrequently administered without due discrimination. Some cases do not admit of great evacuations, and are even aggravated or rendered more obstinate by depletion; yet, to the inexperienced, these cases may appear to be similar to others, where copious bleedings and other evacuations are indispensably necessary. This opinion of the Glasgow physician is corroborated by that of Pinel, Esquirol, and other eminent writers, all of whom are sparing of the lancet, and lay much stress on the necessity of carefully distinguishing those cases where bleeding may be useful from those in which it must be injurious.

After some remarks in recommendation of treating the insane with mildness, the Reporter proceeds to submit some hints on their moral and mental management. Among other means for promoting this object, the attendance of lunatics on divine service is mentioned, and its advantages discussed.

Dr. Burrows, who bestows high encomiums on this Asylum, is of opinion, that religious consolation, imparted privately, would be preferable to public worship; and it may be so, says the Report, in particular cases, and especially if the service were performed agreeably to some established modes. For example, were it performed according to the mode of the Church of England, where each individual of the congregation repeats and responds at certain parts of the service, it might perhaps lead to an unbridled license of the tongue, which would, indeed, as Dr. B. says, be a mockery of religion. But the form of worship, according to the Church of Scotland, is not liable to the same objection; and, as to preaching to unselected auditors, on topics calculated to excite strong emotions or to foster gloomy impressions, we admit that it would be highly injudicious. Yet, with due respect for the opinion of the author, we cannot, adds the Glasgow physician, approve of the mode which he prefers. If a religious monitor were to enter the wards of a lunatic asylum, he would unavoidably be assailed by patients with whom it was not intended that he should hold any communication. The very persons, moreover, to whom his attention might be expressly directed, would be injuriously chagrined or irritated, unless they were indulged in expatiating on the very subjects, on which their minds were already too prone to dwell. But all speculative opinion must yield to the evidence of facts derived from actual experience. Sermons have been preached in this Asylum, to numerous and most attentive audiences, for more than four years, and have not yet been observed to produce any injurious effect on the mind of any one of the auditors. Some of the patients, it is true, may have listened to these sermons without having been much edified, but all of them have been gratified, and many of them soothed and consoled.

These sketches are followed by others, on the influence of laborious employment in promoting the cure of lunacy. Some patients, it is said, whose cases appeared to be almost hopeless, recovered by labouring in the airing grounds. On various occasions, when this employment was for a time suspended, some of the working patients, whose state of mind had been rapidly improving, remained without farther amendment, or even grew worse; but soon after labour was resumed, they again proceeded to improve. In one remarkable instance, in which the most fanciful and gloomy anticipations predominated, whenever the patient was warmed by toil, his mind was relieved. In general, so speedy was the favourable change in this case, that *it seemed as if the vapours of the brain ex-*

haled with the sweat of the brow! The beneficial effect of labour on the mind is twofold: it serves not only to dissipate gloomy and incoherent thought by day, but also to prevent the distressing illusions of the night, by preparing the patient for sound repose.

Many of the lunatics, we are informed, write letters which are correctly and even elegantly penned. A great proportion of these are addressed to the physician, while others, not proper to be dispatched, are preserved; because the letter of a patient serves as an indication, and as a record of the state of his mind, and may also prove to be a useful document, if his case should ever afterwards become the subject of legal investigation. The object of the writer often is to demand the reason of his confinement, or to prove that he ought to be instantly liberated. The style of some is diffuse and rhetorical; others reason more closely; and one ingenious person whose literary productions are extremely curious, occasionally employs the form of syllogism. Some patients exhibit, in their letters, a wonderful degree of consistency and acuteness. It is still, perhaps, too common to suppose that all lunatics are, in point of mental degradation, nearly equal; and, therefore, that they are all equally removed from a capacity for common feeling and from a right to common sympathy. But the forms of lunacy are so various, and aberration from soundness of mind is, in some cases, so slight, that it would be no easy task to determine the precise bounds of rationality.

H. 1821.—Mild treatment and exercise, in the form of recreation or labour, are again stated in this Report as having been found eminently beneficial in the management of lunatics. Many of them occupy their thoughts in writing essays, letters, poems, &c. One of our patients, it is said, has written an ingenious vindication of himself from the imputation of lunacy. He philosophically observes, "I find it difficult to divest the mind of recollections on the topics of business, especially in the situation in which I am placed; for the mind naturally reverts to such subjects as have been familiar to it in times past, on which it exerts its energies in multiplying ideas and conceptions, for lack of reasonable occupation; and, in a maze and labyrinth of conjecture, seeks to find out the cause of being immured with beings in the most lamentable state of existence." Another of these patients, in a disquisition on lunacy, distributes the different persons affected with it into three classes:—DEMENTES, or those who are deficient in mental capacity; VACUI, or those who are completely void of ideas; and the PLENI, or those who possess high ideas of

themselves and of their worldly riches and grandeur—lords of the universe—possessors of supernatural powers—divinely inspired—hearers of the heavenly choristers—and receivers of celestial visions and annunciations.

In madness, says the Report, the power of reasoning on some subjects, may remain ; but when called to act in opposition to the predominant illusions, it proves to be but too feeble an antagonist for those workings of the imagination. One of the surest signs of amendment is an admission by the patient, of fallacy in any of his former illusions ; and, in cases approaching to convalescence, it is often highly interesting to observe the reasoning faculty thus beginning to resume its wonted ascendancy. Such improvement of the mind is sometimes very naturally accompanied with diffidence of judgment. Instead of immuring the insane, without distinction, in the depressing gloom of dismal apartments, where they are deprived of all the accommodations to which they have been accustomed, we should endeavour, says the reporter, to afford them every comfort likely to soothe their troubled spirits ; especially as the enjoyment of such comforts is often one of the best means of promoting their recovery.

This Report returns to the advantages of preaching sermons to the insane. The experience of all those clergymen who have hitherto preached, must have convinced them that the patients selected to be their auditors were capable of listening attentively, and of behaving in the most quiet and orderly manner. Yet, some persons still doubt the propriety of preaching in the Asylum. If, indeed, all our patients were, at all times and on every subject, insane from the time when they were admitted until the instant of their dismission, the attempt to impart to them religious instruction might prove to be fruitless, if not injurious. But some persons are insane only on certain points ; some are insane only at certain times, but enjoy long intervals of reason ; some are in a state of convalescence from insanity ; and, although not possessed of sufficient firmness of mind, nor so free from occasional aberration, as to render it expedient for them to resume their former occupations, or even to mingle with the world, yet are perfectly capable of deriving benefit from moral and religious instruction ; and, lastly, some are *not lunatics*, in any degree, but completely cured of that lunacy for which they were admitted ; yet, according to the rules of this Asylum, they are obliged to remain in it for two months, or, in some cases of periodical madness, for a longer period, as the necessary term of their probation. The illusions of the insane, no doubt, are

sometimes derived from religious impressions, and then great discretion is requisite in regard to religious exercises. But we do not find, among our patients, that religion is a frequent cause of lunacy; and many of our convalescents or probationers, whose malady had not any connexion with religion, are much disposed to attend to religious duties, and to cherish those impressions which they received in their early years, from a religious education. Such persons, before the practice of preaching in the Asylum was introduced, often complained bitterly that they were precluded from attending divine service; and sometimes, at their own earnest entreaties, they were indulged with liberty to go to church, under the charge of a proper attendant. This indulgence was, for obvious reasons, objectionable; but, surely, it would be hard to withhold from such patients the gratification of that public worship, through which our excellent clergymen now humanely impart to them useful admonition and consolation.

I. 1822.--We extract the following observations from the Ninth Report; they will not be without their usefulness. The following detail of symptoms derived from our observation, or consistent with our experience, say the reporters, may serve, without the aid of professional knowledge, to direct attention to the state of the mind on the approach of lunacy, and when proper treatment is likely to be of great avail.

The first indications of lunacy are various; and, as might be expected in the accounts given of a malady which exhibits a great diversity of forms, they have been variously described. Headach, giddiness, throbbing of the temples, or impaired vision, have ushered in a paroxysm; and hypochondriacal apprehensions, arising from a disordered state of the digestive organs, have terminated in maniacal illusions. In many instances, the symptoms first remarked, are a defect in the power of attention, fits of absence, frequent talking or muttering of the patient to himself, unmeaning fixed staring of the eyes, a dejected countenance, and sometimes jerking motions of the body, or odd gesticulations. Together with these appearances, the mind is perhaps under the depressing influence of hurt pride, disappointed hope, or religious apprehensions; perhaps it is brooding over some feeling of remorse, fear, jealousy, or chagrin, on grounds which are wholly imaginary. Love is, in some instances, the predominant impression; and it is equally singular and characteristic, that the object of this affection and the patient are sometimes unacquainted with each other. The first indication, in some patients, is an extraordinary flow of high spirits, about to end, at length, in maniacal

delirium; in others, extreme terror is first noticed. The countenance is pale, ghastly, and strongly expressive of the inward emotion; the speech is hurried and tremulous; and the extremities are cold, perhaps bedewed with a cold sweat. Soon, however, the eye glares malignantly, the face flushes, and assumes the expression of ferocity, the objects of terror become the objects of vengeance, and the patient is furious. In some, there is an unusual degree of suspicion or of anticipation of evil, and a belief in imaginary plots or conspiracies. In others, there is great irascibility and malignity, and some act of desperation, vengeance, or cruelty, is perhaps the first obvious symptom of the malady. From the commencement of lunacy, and especially as long as the mind continues to be in a state of excitement, patients generally sleep little or none; yet some are disposed to lie constantly in bed, and are unwilling to answer questions, or to converse with their friends or relations. In some instances, the patient carefully conceals his illusions for a long time after they have taken possession of the mind. Perhaps, for the first time, he reveals them confidentially to his clergyman, or to his medical attendant. As soon, however, as maniacal illusions are betrayed, the nature of the case is manifest.

The different physiological views which have been taken of the nature of lunacy, the reporters go on to say, may have possibly had some share in leading to certain discrepancies, observed in the accounts given of the symptoms. Some of the most intelligent writers on the subject are not even agreed as to the organ which is primarily affected: nor have they settled whether lunacy is to be ascribed chiefly to moral or to physical causes. We are disposed to think that the disease originates in the brain; and that, perhaps, in every instance there exists a physical cause or predisposition to insanity. The active remedies which are frequently employed with benefit, in cases of indigestion, may sometimes owe their good effects, more to their influence on the state of the head than is generally supposed; and, where there is a known predisposition to lunacy, the possibility that a loss of tone in the digestive organs may proceed from some change going on in the brain itself, ought not to be overlooked.*

* Johnson's Journal for March 1824.

ART. XI. *The New-England Journal of Medicine and Surgery, for April* 1824.

Dr. H. Newhall on the Scabies of Illinois.

THIS disease commences with a violent itching of the arms and thighs; the friction produces an eruption of papulæ, of the colour of the adjoining skin, without inflammation; these recede, and others appear; vesicles follow in the course of one or two days, filled with a clear transparent fluid, changing to a straw coloured matter; friction produces inflammation round their bases. If opened, they disappear; if abraded, they leave a scab, followed sometimes by a scar. When the disease is chronic, the yellow pustules become confluent, and form large irregular blotches, particularly on the legs, breast, and head. It destroys the nails of the toes and fingers in children; the inside of the thighs, arms, and wrists, arm-pits, buttocks, and the sides of the fingers, and the soles of the feet in young persons, are most subject to it. The pustules ulcerate, and the hand is frequently disabled. It is unaccompanied by fever, is not contagious, and cannot be communicated by inoculation.

"The eruption is successive, and has no regular period of duration or decline. It prevails mostly in the winter. I have known persons who have been afflicted with it for four or five years. In these cases, the disease commonly receded somewhat in the summer months, and returned with increased severity upon the approach of cold weather. It has mostly disappeared during the hot stage of intermitting fever, but has returned with the intermission.

"The disease in its different stages, assumes such a variety of appearances, that its diagnosis is often rendered extremely difficult. Other circumstances resulting from the friction and abrasion generally employed, render the diagnosis still more obscure.

"It is distinguished from scabies; first, by the eruption itself; the elevations, in the early stage of this disease, being papular, whereas, in those varieties of scabies liable to be confounded with this, they are found to be vesicular; and in the second place, the contagious nature of scabies will often manifest itself, distinguishing it at once, from the present disease.

"It differs from prurigo in many respects. In prurigo mitis the itching is aggravated by sudden exposure to the air; the eruption commonly occurs in the spring or summer, and affects mostly young subjects. In the Illinois disease, the itching is

relieved by exposure, and the eruption occurs mostly in the winter, and affects indiscriminately persons of all ages.

"In prurigo formicans the feet and palms of the hands are not affected, which is not the case with the disease under consideration. The Illinois itch is not connected with internal disorder, nor does it terminate in scurf. These circumstances may constitute the points of diagnosis between this disease and the different varieties of Lichen.

"Those who have been afflicted with this disease, have resorted to various stimulating applications for the cure of it. Among the numerous articles which have been employed, I know of no one, but has sometimes failed. In general, the application of ointments or lotions containing sulphur, mercury or zinc, together with the internal use of epsom salts, or sulphur, have been productive of the greatest benefit. The ointment of nitrate of mercury, has relieved the intense itching more than any other application; but it frequently fails to promote a cure. The most popular remedy is an ointment composed of the nitric oxide of mercury, Venice turpentine and lard. This is commonly accompanied by the internal use of sulphur. A strong solution of sulphas zinci has caused the eruption to disappear. An ointment composed of the leaves of the Podophyllum peltatum, or May apple, and lard, has, in many cases, entirely removed the disease. The sulphur ointment is frequently used, but with me it has often failed to eradicate the disease, although at other times it has seemed to be beneficial.

"In two cases, the use of the sulphur ointment has caused the whole body to be covered with those elevations of the cuticle, which are usually denominated wheals. The eruption appeared and disappeared irregularly, but could be excited upon any part of the body, in a few seconds, by friction or scratching. The elevations seldom remained long in the same place, often but a few minutes. They were accompanied with an intolerable itching, heat and pricking of the skin. Wheat flour, rubbed upon the skin, appeared to cause some alleviation. By abstemiousness and a cooling regimen, the eruption disappeared in two or three days." 115.

A. L. Pearson on Mumps.

"The complaint from which it is most difficult to distinguish the mumps, is the phlegmonous swelling of the salivary glands, to which children of strumous habit are particularly liable. The seat of the disease is often precisely the same, and its

progress at first nearly similar. In the mumps, the disease always begins first to affect the parotid, and then extends to the glands below; in almost every instance it may be traced to some source of contagion; and it very rarely increases after the expiration of three days: in all which circumstances the disease differs from the scrofulous tumour. But notwithstanding the minutest attention to the distinguishing marks, there are few practitioners who have not been deceived in deciding on the mumps." 117.

"The swelling of the genitals and mammæ terminates in several different modes. Most commonly, the parotids swell a second time, and the other parts are at once relieved; sometimes resolution takes place in these parts without being followed by the original parotid tumour, as in the case of the female mentioned above; an atrophy of the testicle may succeed, and lastly, a translation of diseased action to the brain may take place, producing consequences in the highest degree alarming—febrile excitement, delirium, convulsion, and frequently death. This termination of the disease is fortunately most rare, but has taken place during some epidemics, and has a place in all modern descriptions of Parotitis. (Dict. des Sciences Med. article *Oreillons*.)

"The termination of the mumps by suppuration is more rare than that by metastasis, and when abscess does take place, the glands are for the most part unaffected by the suppuration. The last and rarest termination of the mumps, is in induration and permanent enlargement of the salivary glands. There is some reason to believe that both these last terminations are more common in strumous habits." 118.

Blistering the parotid in every case, mild or severe, prevented metastasis. The use of mercurials is peculiarly disastrous; frightful abscesses, terminating in death from the violence of the discharge, are the result.

Case of a foreign body lodged in the rectum. A smooth piece of bone with rough edges laid across the rectum, was attended with great inflammation, prolapsus, sensation as if pins were in the gut, and was at length extracted by introducing the finger, which relieved all the symptoms.

A case is next stated, shewing the importance of early manual examination in abortion. The symptoms of abortion took place and were protracted for a fortnight; on examination a fœtus of five months, was found with its head protruding through the os uteri. The examination excited contractions, and the child was delivered.

Anomalous symptoms in the Vaccine disease, and remarks on the management of the Placenta follow, in which there is nothing new. Reviews of Larrey's Surgical Essays, Dewees's Essays on Midwifery, and the Medico-Chirurgical Transactions, with selections from the foreign Journals, conclude the number.

ART. XII. *The Philadelphia Journal of the Medical and Physical Sciences.* Edited by N. CHAPMAN, M.D., for May 1824.

Remarks on the Epidemic Bilious Fever which prevailed in Louisville, Kentucky, in the Summer and Autumn of 1821–2. By J. P. HARRISON, M.D.*

LOUISVILLE stands upon an elevated platform of fertile soil, intersected on the south-west for twenty miles, with numerous ponds and marshes, and clothed in their intervals with the most luxuriant vegetation. Lying on the river, it is exposed to exhalations which arise from its bed on the falling of its waters during the summer months, as also to those of an extensive mill-dam near the town.

In the warm months of 1819 and '20, the country was dry and healthy; in 1821 the rain was excessive, the summer warm; the prevailing winds wafted over the town the exhalations from the ponds on its south-west; and the consequence was the intermittent and remittent bilious fever, the subject of this memoir. The author examines the mode in which miasmata attack the system, and concludes that they produce their effect upon the lungs; they cannot act upon the stomach, because persons on a visit of a few hours, or from sleeping in an infected district, have received the contagion, when the lungs were of course the only avenue through which it could have penetrated. The effect of noxious agents on the lungs, as the nitrous oxide, proves the extensive agency of this viscus as a source of impression; other facts support the same conclusion. Arsenious vapours produced in Mr. Accum febrile symptoms, which obliged him to intermit his labours for

* Dr. Morgan's paper on the fever at Thompson's Island, Dr. Coates's paper on blood-letting, though highly creditable, contain nothing new; and therefore are not analysed. Dr. Povall's essay on the fascinating powers of the serpent, and Dr. Hare's papers on the deflagrator and Electro-Magnetic experiments, do not come within the scope of this Journal.

several days; the cows near to the mines in Cornwall, became so much diseased by the inhalation of the cupreous vapours as to lose their hoofs, and were seen crawling about in a miserable condition on their knees. These facts, with collateral evidence that the surface of the skin, of the schneiderian membrane or of the stomach are not the parts on which the miasmata act, induced Dr. Harrison to adopt the opinion that the lungs must be the primary and principal place of operation of the marsh poison.

The fever of 1821 was milder than that of 1822, and appeared later, and it was evidently traced to the ponds on the southern side of the city; for in the year 1819–20, when the weather was dry, it was perfectly free from disease. The ponds in these years were entirely dry before the first of July. Here we would remark that the doctrine lately advanced by Dr. Ferguson, that the cause of fever does not depend on vegetable and animal putrefaction, is entirely contradicted by this fact. These ponds in the year 1819–20, exhibited all the requisites proposed by that gentleman,—marsh with abundant vegetable remains, exposed and dried by the sun, without its effect—fever. Dr. Ferguson came before the world in a very imposing manner on this subject, and advanced an extensive series of facts drawn from observations made in Holland, Spain, and the West Indies; which tended to overthrow all previous observation on the subject. Dr. Harrison's paper exhibits another proof of its fallacy. The years 1821–2 were very wet, and favourable to putrefaction, and very sickly, and it appeared to accord with the observations made by the inhabitants of the district as well as his own, that an unusual quantity of rain generally produced disease in that district.

The intermittent form of the disease was treated most successfully by bleeding as a primary remedy, and tonics generally failed till it was premised. Salivation did not always succeed in arresting it, and was only certainly indicated when visceral congestions followed. In the remittent form bleeding in the first stages was indicated, and active purges with calomel, and when it tended to typhus, blisters to the back of the neck, wrists and ancles, calomel in small doses, antimonial powder with tart. emet. opium, and camphor, he found very serviceable; purging in this state, even by one dose of salts, and bleeding, did much injury. Mild nutriments, as rice water, milk and water, chicken water, were taken in this stage. When the system became comatose, bark and the diffusible stimuli were given, and generally with success. The malignant form of the disease was ushered in with a chill and great oppression

at the scrobiculus cordis, vomiting, and feelings of distress: the skin was mottled of the colour of bronze, cold, and the pulse feeble: The intermissions in these cases were generally complete and deceptive, the patient still complained of load and weight at the stomach, and discharged vitiated matter from the bowels. Tonics were followed by restlessness, thirst, pain in the back and head, and the chilly fit. The fæces in some instances were so acrid as to produce inflammation in the skin, by simply falling on it. They resembled tar, were evacuated in a partial manner with small cheesy lumps of a yellow or whitish colour intermixed. Blotches of an irregular shape, hard upon pressure, appeared upon various parts of the body, though more especially on the arms and thighs: a dark matter like coffee grounds in some cases was ejected from the stomach, which after death was found highly inflamed; green and dark bile were also discharged, which was favourable. As to the treatment—when there was pain in the head, back, great thirst, vomiting and oppression about the stomach, restlessness with long and heaving respiration, he recommended bleeding to deliquium without regard to the pulse, which was generally small, hard and quick, though often full and strong, with great and irregular alternations. Twenty or twenty-five grs. of calomel were then given, after venesection; it sat well on the stomach, and the horrible anxiety and restlessness which tormented the patient, entirely disappeared, and he generally went to sleep after the operation: a small piece of ice was held in the mouth to quench the thirst, and no drink was allowed, as vomiting was the result. In about four hours, small doses of magnesia or epsom salts were given to assist the operation of the calomel. If notwithstanding these precautions this medicine was not retained, nausea, vomiting, fever and restlessness returned, active depletion was again practised, and with success. The purgatives were retained, and were assisted by injections of muriate of soda, which were found more effectual than those of tartar emetic. Where the stools continued dark, these medicines were repeated and a blister was applied over the stomach, the calomel was repeated three or four times a day till active purging was produced, the symptoms of congestion removed, and the stomach tranquillized. This effect took place in a few days, and then the calomel was gradually withdrawn; particularly if the gums were slightly touched. Salivation always saved life in the intermittent as well as the remittent varieties of the disease. Emetics without venesection were fatal, and in the malignant gastric inflammatory cases particularly so: cold water externally or internally ad-

ministered was pernicious: ice taken copiously produced in one instance inflammation of the stomach and death: suppression of urine was always a bad sign; in general it was high coloured and secreted in small quantities. In children below 12 years of age, Dr. H. thinks the use of mercury improper; it produced mortification, and was frequently mortal: as a purge it was useful. In young subjects below eight years no gastric inflammation was discoverable; in them the brain was the part affected. Venesection in the treatment of children in this fever was as essential as in adults. A regular and temperate life, and aperient medicines were generally successful in preventing it, and in those who lived irregularly the sudden change of their habits was pernicious.

The internal coat of the stomach was generally inflamed, as also the intestines, and in one instance to sphacelus. The liver was generally without appearances of disease after death, though in its functions it was much deranged.

Remarks on the Stethoscope in relation to Phthisis Pulmonalis.
By Edward Strudwick, M.D.

"The discoverer of this novel mode of diagnosis, is the indefatigable M. Laennec, of Paris. He deduces his indications by means of an instrument, which he has with much propriety denominated *Stethoscope*. It is derived from two Greek words—*stethos*, signifying the chest, and *skopeo*, to examine. The appellation of *Pectoriloque* is also applicable to it, and comes from the Latin words, *pectus*, the breast, and *loquor*, to speak. The former term is, however, better adapted to its designation, inasmuch as it is expressive of a more extensive and diversified application—whereas *Pectoriloque*, which takes its name from a single phenomenon called pectoriloquism, rendered sensible to the ear by the employment of this instrument, only denotes a limited use of it.

"This instrument is cylindrical, and composed of wood of a light, loose texture, which M. Laennec thinks conveys sound more clearly than that which is hard and dense. It is twelve inches in length, and four and a half in circumference, perforated by a central circular canal five lines in diameter. At its lower or pectoral end there is a funnel-like excavation, which can be filled up when required, by a plug exactly adapted to it, having a continuation of calibre by means of a brass tube, which passes through the plug or stopple, and penetrates some distance into the perforation of the stethoscope, retaining with firmness this detached portion in its situation.

"The intelligence from the employment of the stethoscope, is derived from three sources—the respiration, the voice, and the circulation. By the correct application of one end of it to the thorax, and the nice adaptation of the upper or auricular extremity to the ear, so that its canal will be opposite to the meatus, the vibration of peculiar sounds characteristic of certain morbid conditions of the lungs, are rendered distinctly audible.

"When the chest is explored with a view to attend to the respiration, the stopple must be removed—if in this state of the stethoscope a patient speaks, the excavation at the end of it will yield pectriloquism more or less distinct. The stopple, therefore, is to be replaced when the voice or the circulation is the object of our research—the latter, as I have before remarked, is foreign to my purpose.

"M. Laennec affirms that the stethoscope is competent to the detection of many disorders of the chest, and that frequently, it not only points out the seat and condition of the disease, but suggests the proper treatment, which must have been overlooked, or if adopted, be altogether the result of chance." 37

"When the lungs are ulcerated to any extent, the bronchiæ communicate with the abscess, and on applying the stethoscope over this situation, and directing the patient to speak with his head turned aside, the sound of the voice arrives at the ulcerous excavation, and vibrating through it, seems to arise immediately from the breast, and traversing the stethoscope, impinges on the ear with a force and distinctness, which conveys the idea that the patient spoke to us through the instrument. It is this circumstance which constitutes what is termed pectriloquism.

"When respiration is healthy, it communicates to the ear by the stethoscope a gentle equable murmur,which resembles in some measure the rippling of a small stream.

"By adhesion of the structure of the lungs and congestion, they become no longer permeable to the air, and consequently the murmur of respiration is not to be heard. Though air be received into the lungs, when water and air are interposed between their surface and the parietes of the thorax, the respiratory murmur is absent—sometimes, however, it is indistinctly heard in mild cases of hydrothorax.

"Congestion and permanent induration are easily distinguished by the progress and history of the case—and to ascertain whether the respiration is inaudible from the presence of a watery or an aeriform fluid in the cavity of the chest, we must

attend to the combined results yielded by percussion and the employment of the stethoscope. If one side of the chest be more sonorous than the other, (as the presence of air will render it) or more so than in a natural state, and the respiration is not to be heard on this side, while it is distinct on the other, where the sound elicited by percussion is less sonorous, we may be assured that air is contained in the cavity of the thorax, and is the cause of the cessation of respiration. When the respiratory murmur is wanting, from water in the chest, the stethoscope and percussion give results similar to those in common induration. In both, percussion yields the dull flat sound, and the murmur of respiration is entirely destroyed—the difference, however, can be known from attention to the general symptoms, and sometimes mediate auscultation gives rise to a fluctuating murmur.

"In making examinations with the stethoscope, we should not be too hasty in our decisions, for a considerable excavation may exist in the lungs, and be completely filled with pus. Under such circumstances, pectriloquism will not be produced. Yet immediately after a paroxysm of coughing, which evacuates the purulent contents of the ulcer, and admits the voice into its cavity, we shall have evident pectriloquism.

"During an examination, silence should prevail in the patient's apartment, as the slightest noise will destroy or modify the indication, and lead us to adopt an erroneous conclusion. Where emaciation exists to any extent, a pledget of linen should be inserted between the end of the stethoscope and the chest, to insure its correct application. Without attention to this circumstance, it must prove a source of deception.

"The interposition of thick articles of clothing will not alter or lessen the sound of respiration. But care should be taken to prevent clothing from rubbing against the stethoscope, as this will produce a sound very analogous to some we hear through the instrument." 41

Cases are then given "in which the condition of the lungs, as represented by the stethoscope, was carefully noted down at the time of examination, and compared with the appearances on dissection."

In Hannah Nelson, who had phthisis with shrill cough, pain and dyspnœa, "Pectriloquism existed in the posterior portion of the upper lobe of the left lung, and was also evident in its middle lobe—in the lower portion of this lung, respiration was almost natural. Pectriloquism was very perceptible in the superior lobe of the right lung, while the respiratory murmur could not be distinguished in its inferior portion."

"*Appearances on Dissection.*—A considerable abscess was found in the upper portion of the left lung—also one of less size in the middle portion of the same side, corresponding to the points at which pectriloquism was evident—all that portion of the lung surrounding the ulcers was indurated—the inferior lobe was exempt from disease.

"In the upper lobe of the right lung an extensive abscess existed, with induration of its lower lobe, beset with tubercles somewhat advanced, or abscesses in miniature, filled with purulent matter." 44

Harriet C[illegible] cough, pain in the chest, purulent expectoration, [illegible]able pulse. She was at one time so much relieved as to be thought nearly well, excepting some slight derangement in respiration.

"But before a great while emaciation succeeded, attended with hectic fever, night sweats, and augmented difficulty of breathing—and in consequence of a removal from the Institution, her death was hastened, which took place on the 25th of July.

"By an examination with the stethoscope, pectriloquism was evident in the upper lobe of each lung—respiration in the inferior lobe of the right lung was quite audible, and almost natural. All that portion of the left lung inferior to the abscess, gave no murmur of respiration, and percussion elicited a dull sound, shewing conclusively that complete and extensive induration existed. This indication was obtained by the absence of the murmur of respiration on applying the stethoscope both anteriorly and posteriorly to the chest. On a subsequent examination the ulcer of the left lung had made considerable progress, and pectriloquism, clearly and to perfect conviction, existed over a large extent of the chest. All that portion extending from the clavicle down to the fourth rib, and from the sternum to the edge of the latissimus dorsi, was pectriloquous, denoting an extensive ulcerous excavation.

"*Appearances on Dissection.*—An abscess of some size was found in the superior lobe of the right lung, surrounded with induration. The inferior portion of this lung was exempt from disease, with the exception of a few small tubercles in their incipient state, and the union of these lobes. In the superior of the left lung an immense ulcer was found, which might contain sixteen or eighteen ounces of fluid, occupying the whole of this upper lobe—the inferior portion of this lung was one mass of adhesion, and unfit for the purpose of respiration." 45

Anna Beck, had a severe catarrh and hoarseness, which lat-

ter became permanent with aphonia and troublesome cough. "Her chest was explored by the stethoscope soon after her admission—and induration of the inferior lobe of the right lung was detected: percussion in the clearest manner confirmed this indication. In time the usual symptoms of consumption were developed, and at length pectriloquism became discoverable in the superior lobe of the same lung, by frequent subsequent examinations.

"The middle portion of the left lung gave rise to imperfect pectriloquism: respiration above this point was somewhat obstructed, and in the inferior lobe the respiratory murmur was distinctly audible. The patient died of the disease on the 31st of August.

"*Appearances on Dissection.*—Complete adhesion had taken place between the lobes of the right lung, and it was converted into one compact mass. An extensive ulcerous cavity occupied the superior portion of this lung, with the inferior lobe in a state of induration. The lowest part of the superior lobe of the left lung contained a small open vomica; a few small hard tubercles were found in this portion, and the inferior lobe was comparatively free from disease." 46.

"By resorting to the stethoscope on the decline of an attack of pneumonia, particularly when conjoined with percussion, we detect with the utmost accuracy the presence of induration, so frequently consequent on inflammation of the lungs, and almost immediately too after its formation, when there is a greater probability of relieving the engorgement. This is to be attempted by local, and if necessary, general depletion. An adherence to the antiphlogistic plan, rigidly enjoined, constitutes an important part of the treatment." 50.

Memoir on Hydrocyanic Acid. By MILTON ANTONY.

"The hydrocyanic acid I have used abundantly during the last nine months, and have found its effects almost as uniform as those of any other remedy in the materia medica: notwithstanding my expectations from this medicine were, from the first, very high, I am pleased to state that in my experience with it, I have been greatly and agreeably surprised. It has not been used by me in those coughs attended by high pneumonic inflammation—but in almost every other cough that has occurred in my practice, I have used it, and in every instance with beneficial results. These coughs varied in every degree, from the common and simple form of catarrh to the last stage of tubercular consumption." 65.

"I have used the hydrocyanic acid in two cases of pertussis with the most marked advantage, relieving all the distressing symptoms in a very short time. 69.

"Since the above was written, an experience of fourteen months in the constant use of the medicine, confirms the statements I have made. Its use has been extended by me to various affections—in eruptions of the skin, attended with much irritation, a lotion of gtt. i. ad. iv. in ℥ i. of water, has frequently been decidedly advantageous. In erysipelas, the irritation has been temporarily allayed by its application. In toothach I have applied it advantageously by means of cotton wet with a solution of gtt. xxx. of acid, in a tea-spoonful of water, first cleaning out the cavity of the tooth. In ophthalmia I have generally found it allay that irritation which forbids the use of astringents. Many cases have been cured by the acid and water alone, mixed in proportion of gtt. v. or vi. to ℥ i. of water. I use it in all pneumonic affections accompanied with cough, and have employed it in one case of asthma with very encouraging success." 70.

Description of a Small Muscle at the Internal Commissure of the Eyelids. By W. E. Horner, M.D. Adjunct Professor of Anatomy in the University of Pennsylvania.

"The muscle alluded to, lies on the posterior face of the lachrymal ducts and sac. It is oblong, being in the adult about three lines broad and six lines long. It arises from the posterior superior part of the os unguis, just in advance of the vertical suture between the os planum and the os unguis. Running forwards for three lines it bifurcates. One bifurcation is inserted along the superior lachrymal duct, and terminates at its punctum or near it. The other bifurcation is inserted along the lower lachrymal duct, and terminates at its punctum also, or near it." 71.

Dr. Horner states that this muscle facilitates the passage of the tears into the nose.

"The attachment of the muscle to the posterior face of the lachrymal sac is such, that it draws the posterior parietes of the sac away from the anterior parietes, and dilates the sac, thus tending to form a vacuum, particularly as the nasal face of the sac is fastened to the bony fossa and cannot move. This dilatation is aided by the cylindrical curve of the muscle, whose concavity is orbital, and which curve is brought into a straight line by the contraction of the muscle itself. Now if the diminished diameter of the lower part of the ductus ad nasum with the presence of mucus in it, present a greater impediment to

the introduction of air into the lachrymal sac from below, than to the entrance of tears from above, through the lachrymal ducts—it is clear that while the vacuum is thus formed in the sac by the muscle, the puncta lachrymalia, being bathed continually in the tears collected at the internal commissure of the eyelids, will rapidly transmit the tears to fill up this vacuum. But when the muscle ceases to act, the elasticity of the lachrymal sac will drive the tears into the nose, as the mechanism of the passages is such, that it allows a fluid to pass more readily from the eye to the nose, than from the nose to the eye.

"If this explanation of the functions of the muscle be correct, it will enable us to understand why, in perfect obstructions of the ductus ad nasum, the sac fills itself to distention, and on being emptied through the puncta by pressure, it will fill itself again. It also suggests the probability of some cases of epiphora, depending only on an atony* of this muscle, and consequently to be removed by such remedies as strengthen it. It is scarcely necessary to say that these cases are indicated by an overflowing of the tears, where there is no proof by examination of the passages being obstructed. And that such cases do occur, the writings of surgeons much experienced in the treatment of fistula lachrymalis will sufficiently attest, notwithstanding the very general assertion of the systematic authors, that the foundation of this disease is always laid by a stricture in the ductus ad nasum." 79.

Serres on New Division of Apoplexies.

"*First.*—When an apoplexy does not exhibit in its course any trace of palsy, it is seated in the membranes, and the brain is not the centre of activity of the disease.

"*Second.*—When, on the contrary, palsies become complicated during the progress of apoplexies, it is no longer the membranes, but the brain, which is the principal seat of irritation.

"*Third.*—Serous, or sero-sanguineous, bloody or purulent collections, are effects of irritation of the membranes—of the brain—or of arterial or venous ruptures, which may supervene during the course of apoplexies." 83

"*Thirteenth Observation.*—In 1811 and 1812, seven apoplectics were brought to the Hôtel Dieu in the agonies of death, and died from the thirtieth to the fiftieth hour after the attacks, before any thing had been administered by the mouth.

* "Mr. Trasmondi has taken a different view of the actions of this muscle, but also believes that a paralysis of it will produce epiphora—a case of which kind then under his care he cites."

The stomach, small and large intestines, did not exhibit the least trace of inflammation.

"*Fourteenth Observation.*—During the same years and the course of 1813, I had an opportunity of dissecting twelve apoplectics—four had been treated with emetics, frequently repeated, and in large doses, (six grains of tart. emet.) without exciting vomiting—eight were treated with purgative clysters, a trismus resulting from a convulsive state having hindered deglutition.

"In the four first I found the stomach and beginning of the jejunum in a state of most intense inflammation—the mucous membrane coming off in flakes, leaving the muscular coat naked—some black spots were here and there scattered over the colon—the peritoneum was partially inflamed over both. In those who could not swallow any thing, and had been treated with purgative clysters, there was no perceptible lesion of the stomach, nor small intestines—but all the large intestines from the valve of the colon to the extremity of the rectum were contracted—the internal membrane deep black, and flaky lamina of an inch and eight lines floated within them, and the peritoneal and muscular membranes partook of this acute irritation.

"I conclude from these facts, that the inflammatory traces which were found in the bodies of these apoplectics, were effects entirely produced by the action of medicines, and altogether foreign to the development of the apoplexies—as first, the patient died without taking any thing, and there was not the slightest trace of inflammation in the stomach and bowels—and second, as inflammation is found on the stomach and small intestines, when vomits and purges have been given, and solely on the large bowels when purgative clysters have been employed." 85

Anatomical Investigations. By JOHN D. GODMAN, M.D. Lecturer on Anatomy and Physiology.

This paper contains some interesting discoveries with regard to the fascia on the neck, arm and thigh. Dr. Godman considers that there is but one fascia forming all the processes about the neck, and another those of the thigh, and that in both, the sheath for the muscles as well as that of the great vessels are formed in the same manner. The fascia of the humerus, after constituting sheaths for the vessels in the same way, makes up the whole fibrous structure of the capsule of the ligament of the joint.

Church on Ergot.

"I have used this medicine—1st, In amenorrhœa—2d, In lingering and laborious parturition—3d, In labour complicated with uterine hemorrhage—4th, Where the placenta has been retained from an atonic state of the uterus—5th, In retention of the placenta caused by, or accompanied with an hour-glass contraction of the uterus—6th, In adhesion of the placenta—7th, As a preventive in cases where the patient has formerly suffered much from flooding, consequent to the birth of the child and extraction of the placenta—8th, In cases of uterine hemorrhage subsequent to delivery." 127.

In all these cases it was exhibited with benefit.

"I have used the ergot in cases where the placenta was retained from an atonic state of uterus, with the best results.

"In two cases of retention of the placenta, caused or accompanied by an hour-glass contraction of the uterus, in which I exhibited the ergot, it *did harm* by augmenting the distress of the patients, and rendered all attempts to dilate the stricture abortive. In these cases I had to wait until the effects of the medicine ceased, then dilate the stricture and deliver the placenta in the usual way. Both patients did well." 136.

"I have given it as a preventive of hemorrhage to several women, who formerly suffered much from flooding consequent to the birth of the child and expulsion of placenta. I give it generally in doses of thirty grains, ten or fifteen minutes preceding the probable delivery of the child: it prevented flooding in all cases. Dr. Stearns says, 'that this probably results from the contractile power which the ergot has excited in the uterus previous to delivery, and which is subsequently continued till that viscus is reduced, and the bleeding vessels nearly closed.'"* 137

"I have not observed that the ergot in any case caused the death of the child. I could always find other causes amply sufficient to procure its death. I have no doubt that if given in cases where there is great rigidity of muscular fibre, before the labour is advanced, when the *os uteri* is undilated, the external parts unrelaxed, and where blood-letting has not been premised, that the powerful and continued efforts of the uterus caused by the ergot, will prevent the retreat of the child's head after it has advanced within the bones, and that the unceasing pressure may in some instances occasion its death.

"My experience authorises me to say, that its effects are as uniform as those of tartar emetic, calomel, jalap, opium, or

* Eclectic Repertory, vol. viii. p. 228.

ipecacuanha—and that, prescribed in proper and well selected cases, it will as seldom fail or disappoint the prescriber.

"Dr. Dewees advises the ergot to be given in cases where 'the head of the child has been separated from its body, and left within the uterus.'* Whoever adheres to this advice in all cases will be most wofully disappointed, and the consequences resulting therefrom will in some instances be fatal. Hence the absolute necessity of the practitioner's discriminating and judging for himself before he gives the ergot.

"This unfortunate accident may occur where the uterus and child's head are in three different states, each of which will unquestionably require a different mode of treatment.

"It may occur, first, where the uterus is in an atonic state, and the child's head of a natural size. In this case the ergot is indicated, and its exhibition will be crowned with success.

"Second, where the head is of a preternatural size, from hydrocephalus, or other causes. Exhibited in this case, the powerful contractions of the uterus pressing on the head of the child, which from its preternatural size cannot pass through the pelvis, may, and probably will, occasion inflammation or rupture of the uterus, and consequently destroy the patient. In this case it will be proper to diminish the size of the head, when it may be extracted by the hand or blunt hook.

"Third, where this action is accompanied by an hour-glass contraction of the uterus. Exhibited in this case—by causing the *fundus uteri* to press unceasingly on the child's head, which is prevented by the stricture from passing through the uterus and pelvis, it may cause rupture or inflammation of that organ and thereby destroy the patient. In this case I would give an anodyne clyster, next dilate the stricture in the usual way, and then the head may be extracted by the hand or blunt hook. I have been called to but one case of this kind. I extracted the head with the blunt hook. The patient recovered in about three weeks. I have heard of two similar cases which occurred in this part of the world—one near Meadville, in the year 1809—and the other in the vicinity of this city, in the year 1814. I am sorry to say they both terminated fatally."

Emerson on the Mortality of Philadelphia.

"Those who examine the bills of mortality of this city and those of New-York, will be forcibly struck with the surprising difference presented under the head of *fevers*, the fatality of which, in conjunction with that of bowel complaints, small-pox

* American Medical Recorder, vol. ii. p. 205.

and hooping-cough, will nearly make up the excess in our bill of mortality. The average number of deaths by fevers estimated for the three years previous to 1820, is three hundred and thirty-five.

"We may therefore fairly ascribe most of the increase of mortality in Philadelphia for the last year, to the unusual, and we trust, transient prevalence of small-pox, but more particularly to an unhealthy condition of the atmosphere in its vicinity, which during the summer and autumnal months has proved a prolific source of fevers and bowel complaints." 144.

"Next to fevers, consumption is the most mortal complaint on our list, but it appears to have been much less fatal in Philadelphia than in New-York. The same remark will likewise apply to the inflammatory affections of the chest, to croup, and tabes mesenterica.

"That there is no reason to believe any material difference exists as to the healthfulness of these two cities, under ordinary circumstances, fully appears from a table (subjoined by Dr. Emerson.) The superiority, in this respect, is indeed rather in favour of Philadelphia." 146.

Barton on Lithotomy Forceps.

The forceps of Dr. Barton is much smaller than the one in use, being about six inches long, and the blades are thinner, with an excavation and vacuity in their extremities for receiving the stone. According to the present plan, "the bulk of stone and forceps blades, as they have to pass through the incision in the neck of the bladder, is perhaps, upon an average, double that of the stone itself—consequently, double the resistance is made to the extraction.

"Another objection to the common forceps is, notwithstanding all care, the liability of the instrument to lose its hold, and the stone to slip back into the bladder, thereby greatly prolonging the patient's sufferings." 147.

This instrument has been tried with success by Dr. Barton and others in several cases.

Stout's Case of Habitual Vomiting, depending on the pressure of a Scirrhous Tumour upon the Œsophagus.

"In the summer of 1821 the patient grew weak—his complexion sallow—loss of appetite—and in November he began to vomit after eating. As the disease advanced the vomiting occurred more frequently, and became gradually attended with nearly all the symptoms of dyspepsia—such as heart-burn, sour eructations, flatulency, gnawing in the stomach, uneasy con-

striction in the throat, a slight pain in the region of the liver, with a difficulty of lying on the left side, dyspepsia, cough, and an affection of his voice. In August 1822, a small indurated tumour made its appearance on the right side of the trachea, immediately above the clavicle. This tumour increased rapidly in size, extending upwards, and in a short time it acquired the size of a man's fist, on the side of the neck. Soon after the tumour was first discovered, the patient's stomach rejected every article of diet and drink—great weakness and palpitation of the heart ensued—the cough became very violent—breathing laborious—which continued until the fifth of the ensuing November, when the unfortunate sufferer expired." 148.

"In the superior mediastinum, and opposite the third, fourth and fifth dorsal vertebræ, a scirrhous tumour of considerable size was found, that nearly surrounded the œsophagus and bronchia. From this tumour a thin indurated cord extended upwards on the left side of the trachea, and formed the connecting medium between it and the larger tumour on the side of the neck. The œsophagus and bronchia were considerably contracted and inflamed, where they were enveloped by the scirrhous mass—but the inflammation extended only a very short distance beyond the parts that were mechanically acted upon by the tumour. The right carotid artery was much enlarged and diseased." 149.

Jackson's case of Poisoning with Opium, successfully treated.

This case confirms the treatment of cold affusions of water on the surface of the body, when large quantities of opium have been taken. The water produced its effect very soon, the stomach became sensible to the emetics, and the patient recovered.

Reviews of Beck on Medical Jurisprudence, a valuable book, Sweetser on the Capillaries, also valuable, Transactions of the Phrenological Society of Edinburgh, and the Elements of Phrenology, by Charles Caldwell, follow; the last work is also a production of merit. Medical and Physical Intelligence, with a Report of the Small-pox Hospital, are then given. This report, to the first of January 1824, was presented by Dr. Mitchell, and published in our last number; it is continued, by Dr. Bell, down to April, and the following is the result of his observations.

"Though the cases are scarcely numerous enough to enable us to draw an inference beyond the reach of cavil, we are justified on a reference to the tables, in placing vaccination before inoculation, and even a previous attack of small-pox, as guarding most certainly against a fatal termination, though it may

not guarantee so well as either of the two latter, exemption from the secondary or mitigated form of the disease. We find by the tables, that, of the whites unprotected, about one-half died, while of the blacks, in similar circumstances, two-thirds died. Of the males, the proportion of deaths in the unprotected, was nearly three-fifths—of the females two-fifths.

"The anomalous varieties of the natural small-pox which proved most unmanageable by medical treatment, and fatal in their termination, were:—

"1. Where the eruption was irregular in figure, flat or little elevated, dry and of a certain hardness—never fully maturing. After the fifth or sixth day, the face swelled and the skin was of a smooth and mottled appearance. With these symptoms were generally associatad sore throat, salivation and delirium. We have met with no instance of recovery from this form of the disease, in which the muscular strength was often retained to the last hour. Death occurred from the eighth to the eleventh day.

"2. Where the eruption was confluent, and the body covered with coherent clusters, the skin being of a rosy or deep red hue. Sore throat was often met with at the same time. On the filling of the pustules the secondary fever and delirium supervened, and frequently carried off the patient from the twelfth to the sixteenth day.

"3. After the eruption was subsiding and desquamation commencing, erysipelas of the face and extremities supervened and terminated fatally. This may be considered as a hospital variety of the disease, for we have not seen it in the numerous subjects of dispensary or private practice.

"In the latter stage of the disease, more especially when the eruption had been very extensive and full, the lining membrane of the stomach and lungs have taken on inflammation to such extent as to cause the patient's death. In other cases the skin denuded of its outer covering or cuticle, became exquisitely sensible to the slightest variations of temperature in the surrounding air, and the impression thus transmitted to the lungs already enfeebled by previous disease, has been followed by catarrh or pneumonia, which sometimes destroyed the patient in twenty-four or thirty hours.

"As our attention is still directed to the subject, and we continue to observe studiously the cases which, though in smaller number, are still presented to our notice, we forbear on the present occasion entering into a minute history of the disease, or details of medical treatment.

"Respectfully submitted, by J. K. MITCHELL,
April 5, 1824. JOHN BELL."

ART. XIII. *Observations on the Pathology of Scrofulous Diseases, with a View to their Prevention.* By W. P. ALISON, M.D. F.R.S.E. and joint Professor of the Theory of Medicine in the University of Edinburgh.

THIS paper chiefly relates to the time of life at which certain scrofulous complaints are most prevalent,—the circumstances by which they are most liable to be excited,—and their rates of mortality. The author commences by remarking the discrepancy (particularly noticed by Dr. Young,) which prevails among the testimonies borne by medical writers, with is regard to the period of life at which pulmonary consumption most prevalent. The commonly received opinion that phthisis is scarcely to be met with after thirty-five, does not seem by any means correct. Out of 100 patients who died in one year at La Charité, only 33 were under thirty years of age; 67 were above it, and of these 44 were above forty. Of 135 deaths recorded by Dr. Haygarth, 25 occurred before the age of fifteen, 68 above thirty, and of these 44 were above forty. Of 96 deaths recorded by Dr. Aikin, 36 took place beyond the age of forty-five. Without entering more into individual observations, we may mention, that out of 524 deaths, the records of which are mentioned by Dr. Alison, 94 took place under fifteen; 151 between fifteen and thirty; 279 above thirty, and of these 172, or just one third, above forty. Of 620 deaths recorded at Berlin, 251 occurred before fifteen; 73 between fifteen and thirty; 296 after thirty, and of these 230 were after forty. The result of these calculations agrees with the author's experience at the Edinburgh New-Town Dispensary, and with our own at a similar and very extensive institution in this metropolis. Indeed, we have long been forcibly impressed with the conviction, that fatal disease of the lungs, consisting in purulent expectoration and hectic fever, is much more common in advanced periods of life, than is generally supposed. The majority of cases of this kind, which have fallen under our notice, have been in individuals above thirty years of age; and we have seen it in persons above seventy.

Dr. Alison is of opinion that there is a decided difference between the pulmonary consumption which occurs below the age of thirty-five, and after that period; the difference consisting in the state of the lungs, rather than in the symptoms. He thinks that simple white tubercles imbedded in the lungs, and

having little hardness around them, are much more frequently met with in the young, than in the middle-aged, or advanced in life; while the ulcerated lungs of the latter is more generally connected with the dark-coloured induration, which we are accustomed to designate by the term *hepatization*. Of twelve persons who died of pulmonary consumption after forty, twelve were examined: in six there were no tubercles, and in the others the number was small. Here again we beg leave to corroborate the accuracy of Dr. Alison's remarks: we have examined the bodies of many persons above forty who have died of this disease, and in these we have very often failed in discovering any tubercles. We have not, indeed, looked for these with the same views which guided our author, but we have looked for them in order to point out to pupils, who were present, the characteristic nature of the pulmonary tubercles; instead of which we have generally found an irregular cavity, of greater or less extent, surrounded by hardened masses, with soft pulpy portions intermixed, easily broken down, and of which, probably, no better idea can easily be given, than by saying that the textures were rotten.

"If this observation shall be confirmed by others, it may be supposed that the phthisis which is fatal to young persons, is more generally the effect of organic change of structure,—of the deposition of the matter of the white tubercles,—and depends more on circumstances of predisposition; and that that which is so common in older persons of the lower orders, is more to be ascribed to frequent irritation, and to repeated and neglected inflammation, not originally of an unhealthy character.

"In confirmation of this opinion, we may refer to the observation made by Home and others, that although, in the upper ranks of society, there are more female phthisical patients than male, probably from the greater variation of dress, yet in the lower, among whom the disease is prevalent so much later in life, it is the males that are chiefly subject to it, evidently in consequence of their more frequent exposure to cold and wet.

"Another fact, which still more clearly demonstrates the effect of repeated irritation of the lungs, in producing, even in constitutions not predisposed to it, that modification of phthisis which occurs in middle and advanced life, is the well-known unusual frequency of the disease in those workmen who are much exposed to irritation of the lungs, particularly such as are in the constant habit of inhaling various fine powders into their lungs,—in coal-heavers, dressers of flax and feathers, needle-grinders, in the workmen in the mill-stone

quarries of Waldshut, and in the stone-masons in this country. I have witnessed many melancholy examples of the disease among the latter class, at the age of forty or more, and in well made men, of apparently vigorous constitution, and the appearances on dissection have been what I have stated above; and I have reason to believe that there is hardly an instance of a mason, regularly employed in hewing stones in Edinburgh, living free from phthisical symptoms to the age of fifty.

"These facts appear to illustrate the more general fact of the more frequent occurrence of phthisis in the lower ranks than the higher, at advanced periods of life; and to show that phthisis of that time of life depends chiefly on repeated and neglected irritation and inflammation; and that the means of prevention, or even of cure in cases early and judiciously treated, must be sought chiefly in attention to avoid the ordinary causes of inflammation, and in early and suitable medical treatment when the first symptoms of it appear, such as it is the object of well devised, and well conducted medical charities to afford." (p. 372—374.)

Regarding the phthisis of earlier periods of life as "almost exclusively a scrofulous disease," our author proceeds to consider, first, the circumstances on which the constitutional predisposition to scrofula depends; and secondly, the mode in which scrofulous diseases are excited.

Dr. Alison is of opinion that too much attention has been given to the circumstances of hereditary contamination and the influence of climate, and too little to the amount of effect produced by other circumstances. The agency of cold in producing disease is not by any means striking in those most exposed to it, but in those whose constitutions are in such a state as to favour its operation. Thus, persons in the country, exposed to all the vicissitudes of the weather, as they have robuster frames, so they suffer less than the debilitated inhabitants of large towns. He calculates that cold is "intimately concerned in the production of fully two-thirds of the deaths among the lower orders, in a great town in this climate." The application of these remarks is made as follows:

"Now, what is true of the production of disease in general by exposure to cold, seems to be true of the production of scrofulous diseases in particular; but with these limitations: 1. That scrofulous action appears to be excited almost solely in the earlier periods of life; 2. That to the production of this kind of diseased action, there appears to be required, besides other conditions, a certain peculiarity of habit, not understood, but manifestly hereditary; and 3. That the consti-

tutional debility, which disposes to scrofulous disease from cold, appears to be more permanent and habitual than that which disposes to the other diseases resulting from this cause.

"The term *disease of debility* is much too vague for scientific discussion. It is easy to see that it is not every one who is weakened, even permanently, that becomes thereby disposed to take on scrofulous disease, nor every one who possesses considerable bodily strength that escapes; but if it appear, on careful inquiry, that, of a given number of persons, previously weakened by other causes, a much larger proportion becomes affected with some form of scrofula, than of an equal number not so weakened, but otherwise similarly circumstanced, we are entitled to conclude that, in many cases, the scrofulous tendency depends in part on, or is much increased by, a state of general debility: and it is probably only in so far as it depends on this cause that it is remediable.

"The facts which seem most decisive as to the connexion of the scrofulous habit with general debilitating causes, may be recapitulated as follows:

"1. The differences in the symptoms and progress of inflammation, when scrofulous and when healthy, appear manifestly to indicate in the former case a languid state of the circulation, particularly in the capillary vessels of the diseased part.

"2. The hereditary disposition to scrofula is chiefly transmitted from parents, and is most observed in children who shew evident marks of constitutional debility in other respects.

"3. There is no state of the body, as every practitioner knows, in which scrofulous action is so easily excited, as the state of great and often permanent debility which remains after severe febrile disease, continued fever, small-pox, measles, scarlatina, or which follows the long-continued use of mercury, or accompanies amenorrhœa.

"4. The season at which scrofulous diseases have been observed to prevail most in this climate, is not that when cold weather has recently set in, and is most productive of disease in general, but the end of winter and the spring; and they are then chiefly observed in those young persons who have manifestly lost strength during the continuance of the cold weather. The gradual diminution of strength in weakly persons during cold weather, is naturally to be expected, (conformably with what we know of the agency of cold on the healthy body, and with other physiological principles,) from the habitual chilling of the surface, and more particularly from the little exercise

taken by these persons in such weather. It is commonly stated, likewise, that scrofulous diseases are not so prevalent in the coldest climates as in milder, but moister climates, such as that of Britain, where the temperature, during most of the winter and spring, is from 32° to 45°, and the air usually moist; and it is perhaps to be expected that such weather will be more weakening and depressing to the constitutions of young persons than colder, but dry and frosty weather; because it will restrain them more from taking exercise, and will allow of less evaporation from the surface during any exercise that is taken. The observations made on this head, however, do not seem to me so decisive as they have been thought; because due allowance has not been made for the circumstance of the more northern countries, which have been compared with Britain in this respect, being more thinly peopled, and a much smaller proportion of their population being the inhabitants of large towns.

"5. The most leading fact in regard to the connexion of the scrofulous tendency with debilitating causes, (and one which is of itself sufficient for the most important practical application that can be made of knowledge on this subject,) is the much greater frequency of scrofulous diseases in the inhabitants of great towns, than in the agricultural population of any climate." (p. 380–383.)

* * *

"6. I apprehend we may go a step further in pointing out this connexion, and assert, that the weakness of system produced, in many cases, by residence in *hot climates*, during childhood and early youth, gives probably a disposition to scrofula, in those who are afterwards exposed to the exciting causes of it during early life. We know, at least, that a great majority of the inhabitants of these climates, both Negroes and Hindoos, are usually prone to scrofula when they come to temperate climates, and even suffer from it in some instances in their own, where Europeans are nearly free from it." (p. 397.)

* * *

"Lastly, All that has been said of the effect of causes, certainly debilitating, in favouring the tendency to scrofulous diseases, is confirmed by what experience has shown of the effect upon that tendency, and even on the slighter forms of the diseases themselves, of such remedies as are truly and certainly strengthening to the human constitution. We have seen the effect of rural life on the scrofulous habit; and every physician who has practised in a great town can testify that, in circum-

stances which demand the use of tonic remedies, and of no others, the most powerful that he can prescribe is a residence in the country. 'There,' says Dr. Willan, speaking of the ill-defined symptoms to which he gave the name of simple asthenia, and which he found so common in London, 'a change of pursuits, a more regular plan of diet and exercise, a more clear and purer atmosphere, the salubrious exhalations from growing vegetables, and the grateful stimulus of their odours, in a short time restore vigour to the body, and firmness and serenity to the mind.'" (p. 400, 401.)

After these remarks, which apply to the formation of scrofulous diathesis, the author next proceeds to one of the most important questions connected with the development of strumous disease,—viz. how far tubercles are connected, in their origin and progress, with increased vascular action? The opinions of Bayle, Laennec, Andral, and Dr. Baron, have at various times been laid before our readers; and it is sufficient for us at present to remind them, that these pathologists maintain that the formation of tubercles is quite independent of inflammation. Dr. Alison, on the other hand, has adopted an opposite opinion, and relates various cases in support of his position. The first set of these consists of examples in which the tubercles were not the cause of death, but were found so immediately succeeding the symptoms, and so much connected with the indisputable effects of inflammatory action, that the author regards their formation as having been dependent upon it. The second class of cases occurred in children, (previously unaffected with any pulmonary complaint,) who had been attacked with symptoms of inflammation, which, after lasting some time, had passed away very imperfectly, and the children fallen into consumption, and died within a few months: on dissection, tubercles were found in various stages of progress, but with little, if any other appearance which could be regarded as the effect of the previous inflammation. One example of each of these is all that our limits will permit us to extract.

"Case I.—J. P., æt. four, of a weak habit, but healthy, was seized in the beginning of November 1822, with febrile symptoms, headach and pain of the abdomen, attended with tenderness on pressure; which last symptom, however, was not urgent. The febrile symptoms remitted repeatedly, but she continued subject to much pain of the abdomen, generally with a loose state of the bowels, till the beginning of December, at which time I first saw her. The symptoms had just then undergone a remarkable change,—the pain of the abdomen was almost gone, but she had a great deal of vomiting,

excited by almost every thing she swallowed, cold extremities, small, often irregular pulse, and drowsiness approaching to coma, though without headach or delirium. These symptoms lasted, with little change, except progressive emaciation, for ten days; the vomiting then ceased, and she was seized with convulsions, followed by coma and dilated pupils; in which state she lay four days, with occasional returns of convulsion, and died on the 19th December.

"On dissection, the ventricles of the brain were found distended with serum.

"Almost the whole peritoneum, except the covering of the stomach, was covered with an exudation, resembling the coagulable lymph so often thrown out on it by inflammation; except that it was generally of a somewhat yellower colour, and was disposed chiefly, though not entirely, in the form of round tubercular eminences, of various sizes, none so large as a split pea. By the intervention of this matter, numerous adhesions of the liver to the parietes of the abdomen, and bowels to each other had taken place. In various places, where the exudation was thickest, the peritoneum was thickened, and very vascular. In the pelvis there was an irregular mass, of the same appearance, which hardly adhered to the peritoneum. The ligamenta lata of the uterus were much thickened, and of a deep red colour, and on cutting into them, much thick pus was found between their layers.

"This was manifestly a case of conversion of abdominal disease into hydrocephalus. Had it not been for that conversion, the inflammatory appearances in the abdomen might probably have subsided, the pain of the abdomen having almost ceased long before death. The disease would then, I have no doubt, from what I have seen in other cases, in which there were depositions on the peritoneum in precisely similar forms, but of larger size and somewhat firmer consistence, have passed into the form of the tuberculated accretions on the peritoneum described by Dr. Baron; and, if this had been fatal at a subsequent period, it would have been impossible to judge whether inflammation had produced the tubercular masses that were found or not; a point, on which the appearances observed in this early stage of the disease in the present case left, I believe, no doubt whatever in the minds of the gentlemen who witnessed this dissection. (p. 411—413.)

"Case VI.—J. S., æt. five, a boy of ordinary stature, and pretty stout, but somewhat rickety, and with a small scrofulous sore on his leg, was attacked in the end of November 1815, with well-marked pneumonic symptoms. While these

were recent, he was seen by different medical men, who had no doubt of their nature, and he was bled twice at the arm, and used the other usual remedies, with very imperfect success; the heat of skin, febrile oppression, and dyspnœa, abated somewhat; but his breathing continued short, his cough very troublesome and dry; and he passed gradually into the state of perfect hectic, the rigors in the afternoons and morning sweats being unusually severe. He died, considerably emaciated, in the end of January 1816.

"On dissection, the lungs were found of the natural spongy texture throughout, and the disease appeared to have been confined to the bronchial glands, which were enormously enlarged, and all converted into the usual cheesy or tubercular matter. There was no other disease in the thorax or abdomen." (p. 425, 426.)

If it be argued that the tubercles found after death in these cases were not produced by the inflammation, but that this only accelerated their development, Dr. Alison replies, that it is of little practical importance whether we regard the inflammation as capable of generating these bodies, provided we concede to it the power of thus accelerating their fatal progress. He regards this excitation of tubercles by inflammatory action as placing a practical limit to the use of tonics, and urges the employment of all means to counteract the tendency to scrofula, "*while it is still safe to use these means with effect.*"*

* Lond. Med. and Phys. Jour. May, 1824.

ANALECTA.

1. *On the Medicinal Properties of Colchicum.* By Dr. Kinglake.—After admitting the difficulty of determining the maximum and minimum doses of colchicum, and having previously made some remarks on the ambiguous practice of attempting to cure diseases by narcotics, &c. he observes that—

"The range of dose (of the colchicum) is from five drops to two drams of either the spirituous or vinous tincture, or of the aqueous infusion, in three table-spoonfuls of water, or any other slender vehicle. The medicinal virtues of colchicum are readily yielded to either a spiritous, vinous, or aqueous menstruum. A saturated tincture is obtained by infusing four ounces of the dried root, sliced or bruised, during eight and forty hours, in eight ounces of either proof spirit or sherry wine; or an equally efficacious infusion may be procured by digesting, for about twenty-four hours, a similar quantity of the root in the same proportion of boiling water. The root has not been popularly administered in substance, in the form of either powder or pill; and it is probable that the active principle, on which its medical efficacy depends, would in that shape be too much encumbered with ligneous matter, to be capable of exerting its power in the direct and specific manner that results from its spirituous and aqueous solutions."

Twenty drops of either the spirituous or vinous tinctures, or of the aqueous infusion, will, in general, be found to nauseate, and often to move the bowels; though, says Dr. K., the quantity may be occasionally extended to 40 or even to 60 drops, without producing any sensible inconvenience. If the purpose for which colchicum is taken be not speedily accomplished,—if the pain intended to be subdued by it is not overcome, it becomes a subject of considerable importance to determine how long the use of the medicine should be continued. The quantity that may be required to remove the existing pain may occasion either threatening stupor, or unappeasable vomiting: when this is the case, either the brain or stomach, and sometimes both, are the situations in which its narcotic agency is more particularly exerted. As in other instances of powerful medicine, such as mercury, digitalis, arsenic, &c. the system becomes, sooner or later, saturated with colchicum, under its use. After this point is ascertained, small doses act with much greater power than larger nad previously done. This should be an intimation for desisting from its farther use, lest the concentrated violence of its operation should prove seriously injurious. The acme, or extent of saturation that should not be exceeded, is shewn by small doses inducing nausea, vertigo, loss of appetite, and a sense of great increasing languor. Under these circumstances, the medicine should be suspended for a week or ten days, to afford an interval for its influence to become gradually dissipated, and finally extinguished, before it would be either prudent or safe to venture on resuming it, &c. &c.

We agree with Dr. Kinglake, that the prevailing practice of indiscriminately resorting to a remedy like that of colchicum, which acts by diminishing or suspending the natural susceptibility of being painfully affected, is too adventurous and doubtful to be warranted on any principle "of correct speculation," or practical safety. The agent, he very justly observes, that could so far alter the natural conditions of organic feelings as to induce temporary insensibility, may go to the unhappy length of annihilating life itself. The transition from the insensible state to that of death is but short, and may speedily be effected by the continued influence which had occasioned such a morbid reduction of natural feeling. Dr. Kinglake on Elaterium, as well as on

Colchicum, will be read with much satisfaction, by every branch of the profession.—*Monthly Med. Chirur. Review, March*, 1824.

2. *Appearances after Death in a Case of Hooping-Cough.* By JOHN WEBSTER, M.D. of the Royal College of Physicians of London, Physician to the Royal Infirmary for sick children, &c.

Dr. Webster, who has lately directed the attention of medical men to that affection of the head, so commonly observed in hooping-cough, and who has detailed a new method of treatment, which, it would appear, has been attended with considerable success, although it still remains to be proved, by additional experience and observation, how far the opinions expressed on the subject are correct; has given here an account of the appearances on dissection in support of his thesis, being the only fatal case that has come under his immediate observation; hence the publication of the papers alluded to, "although since that period, Dr. W. has had an opportunity of treating 184 cases, at the infirmary of sick children alone, according to the method formerly recommended, viz. the application of leeches to the forehead and behind the ears, blisters, and occasional purgatives."

"On opening the chest, about thirty hours after death, the external appearance of the lungs was quite healthy; no adhesions were found in any part of the thorax; when pressed between the fingers and thumb, the lungs had quite the emphysematous feel peculiar to healthy structure; and there was no induration or hepatization in any part of them. The larynx and trachea were slit open with a pair of scissors; and the ramifications of the bronchia were minutely and carefully traced into the different lobes of the lungs; but no diseased appearance whatever was observed at any point, except at the bifurcation of the trachea, where there was a slight blush of redness on its internal surface, with a small collection of frothy, but healthy mucus. There was no abrasion of surface, or unusual vascularity; indeed it scarcely seemed different from the natural state; and the cut surfaces of any portion of the lungs, when squeezed, did not furnish large spots of mucus at the minute open ends of the bronchia. The heart was quite natural in appearance, and no water was contained in the pericardium. The abdominal viscera were healthy.

"After the scull-cap was sawn through, considerable difficulty was encountered in detaching it from the dura mater, which adhered firmly to its internal surface. When the brain was exposed, great vascularity was observed on both hemispheres: the convolutions were so pressed together as almost to make them disappear; it was necessary to press rather firmly with the handle of the scalpel, in order to separate them from each other. The pia mater was very vascular, and there was a good deal of effusion of a serous like fluid under it, especially at the anterior and upper part of the brain, where a few spots of coagulable lymph were seen; the two hemispheres were also slightly adhering to each other at the anterior, by means of small shreds, like minute vessels, emanating from the pia mater. In the ventricles, about two ounces of serum were found: on the internal surface of these cavities, a number of small vessels, filled with blood, were found ramifying on it, particularly on the lower part or floor; and the choroid plexus, on the left side, was rather larger than usual. The cerebellum was healthy; but the vascularity observed on the superior part of the brain extended also to the basis, and, in the sheath of the medulla oblongata, nearly half an ounce of fluid was collected."

So far the new pathology of hooping-cough is borne out, and it only remains for a regular accumulation of well-attested evidence and actual observation, to establish it on the basis of morbid anatomy.—*Ibid.*

3. *On the use of the Colchicum in Tape-worm.* By ROBERT CHISHOLM, M.D., Physician to the Kent and Canterbury Hospital, &c.—The patient had been afflicted with tape-worm ten years. "He had applied to regular practitioners, and had tried the whole routine of anthelmintics, with only temporary ben-

efit; his farrier had given him 'turpentine enough to kill a horse,' but with the same result. Having had a case, in which the vinum colchici, given for rheumatism, brought away a considerable quantity of tape-worm, I was induced to try it, and, for that purpose, furnished Mr.———— with two ounces of the vinum colchici, (made after Dr. Marcet's recipe) and desired him to take a tea-spoonful, in a little water, two or three times a day. On the third or fourth day he passed a large quantity of worm, and continued to take the medicine for a week, but did not pass any more worm. He has been perfectly free from it for more than three years. It may be remarked, that he took no medicine whatever but the colchicum. I regret that I have not been able to learn if the medicine was equally efficacious in the case above alluded to."

Dr. Chisholm observes, that should this medicine be found, on further trial, to act with certainty, it will be a great acquisition, as the dose is small, and the taste by no means disagreeable: two most important requisites in medicaments of every description.

We have always found Madame Noufler's* remedy to bring away the tape-worm, where every other had failed; and, though it may happen not to succeed the first, or even the second time, a repetition of it at sufficient intervals will invariably remove this species of worm.—*Ibid.*

4. *Generation of Muriatic Acid in the Stomach, during the Process of Digestion.* It has long been known to physiologists, that a powerful acid exists in the stomach of animals during the digestive process.

Many experiments have been performed to ascertain the nature of this acid by different chemists, and which has generally led to the conclusion that it was the acetic; however, the experiments of Dr. Prout, communicated to the Royal Society, on the 11th of December, 1823, seem to set the matter at rest. He there states, that the saline matters found in the stomach, consist *chiefly of the alkaline muriates,* and also a large portion of *free muriatic acid.* —*Ibid.*

5. *On the Local Application of Belladonna in Puerperal Convulsions.* By M. Chaussier.—This eminent physiologist and accoucheur, after describing the state of the uterus during this very dangerous disease, and pointing out the curative means which should be employed in it, takes particular notice of the local application of belladonna. He considers that the chief obstacle to delivery consists in the spasmodic constriction and resistance of the neck and orifice of the uterus. With a view of removing this, and, at the same time, of remedying the local plethora or congestion to which the nervous system is subjected, he recommends the active means (depletions) usually inculcated in this country, with revulsants to the lower extremities, cold applications to the head, emollient and relaxant enemas, and properly conducted endeavours to effect delivery. In order to subdue the spasmodic constriction of the neck and orifice of the uterus more particularly, and thus accomplish the last-mentioned purpose, M. Chaussier has been in the habit of employing the belladonna in the form of ointment, with very great success. This ointment consists of two drams of the extract of belladonna, moistened with a little distilled water, and incorporated by trituration with an ounce of simple cerate or prepared lard. He enjoins it to be applied directly to the orifice of the uterus; and, in order to accomplish this, he employs a small syringe, rounded at its extremity, with an aperture there sufficiently large to admit the point of the little finger. Having drawn back the piston, as much of the ointment as is equal to a small nut is to be placed in the aperture of the syringe, which,

* The male fern root, (felix mas) from one to two drams, in the morning fasting; about an hour afterwards, the submuriate of mercury and jalap, in the proportion of five grains of the former to five and twenty of the latter. The patient ought to lie down after taking the fern, and endeavour to retain it on the stomach, obviating nausea by means of lemon-juice, &c.

by the direction of the finger, is to be carried to the orifice of the uterus, with which, by pushing the piston, the ointment comes in immediate contact. The os uteri generally becomes dilated in about thirty or forty minutes after this application, without impeding the action of the fundus or body of this viscus. This medicine has been employed since 1811, by M. Chaussier, and under his directions, by Madame Lachapelle and Madame Legrand, and its use made public both in his lectures and in several pharmaceutical works. As the introduction of belladonna into obstetric practice has been arrogated by more than one accoucheur of this metropolis, we think it just to assign the practice to the real originator of it.—*Ibid.*

6. *On the Specific Action of certain Substances on particular portions of the Encephalon.* By M. Flourens.—It is considered that certain substances introduced into the digestive organs, or into the vascular system, act chiefly or specifically on the brain. But it has not yet been explained how these substances, acting all on the same organ, produce, nevertheless, phenomena essentially different. Mr. Flourens, whose former experiments tend to show that the encephalon is composed of several parts, performing essentially distinct functions, entertained the idea of ascertaining, by direct experiments, the cause of the diversity of effect, just alluded to, in the proper or specific action of each of these substances on each of the different parts of the brain.

It appears from these experiments of M. Flourens:—

1st, That, up to a determinate dose, opium acts exclusively on the cerebral lobes; belladonna on the corpora quadrigemina; and alcohol on the cerebellum.

2d, That the physical results of the action of each of these substances on each of these parts are absolutely the same as those from mechanical lesion of these parts. As, for example, when a substance acts only on the lobes of the cerebrum, the functions of those lobes are alone injured: when on the cerebellum solely, those of this organ are deranged; and when on the corpora quadrigemina, those of this organ are injured, &c.

3d, That the action of each substance always leaves, after death, and points out, even during life, signs which may serve to distinguish the affected organ from the others.

4th, That camphor, æthers, &c. act in a manner analogous to alcohol; the watery extracts of henbane and bitter lettuce, &c. in a way similar to opium, &c.

The experiments on which these inferences are founded have been repeated before M.M. Cuvier, De Humboldt, Portal, Dulong, and Dumeril, who were commissioned by the Institute to report upon the *Memoir* of M. Flourens.—*Rév. Méd. Jan.* 1824.

7. *Tincture of Nicotiana in Ischuria.*—Dr. Westburg, of Halmstad, in Sweden, has derived great advantage from the use of tincture of nicotiana in the treatment of ischuria: he gives twenty drops every hour, in a glass of linseed tea, and he has universally observed the most beneficial results, sometimes even from the second or third dose. He also employs this remedy successfully in blenorrhœa, when the patient can only make water drop by drop. —*Revue Medicale*, Nov.

8. *A mode of preventing the corrosion of copper sheathing, by sea water, in ships of war, and other ships.* By Sir Humphrey Davy, Bart. P. R. S.—The attention of the president having been drawn to this subject by the Commissioners of the Navy Board, he instituted a series of experiments upon it, and has discovered a simple and effectual mode of remedying the evil.

Copper, when immersed in sea-water, however pure and malleable it may be, becomes covered with a coat of green submuriate, a sort of rust, which, when washed off, is succeeded by a similar one, and the process continues until the metal is completely destroyed.

It is evident, that no alteration which could be effected in the copper, would prevent its corrosion; the effect of different kinds of copper might be somewhat different, but the principal diversities must be owing to the variations in the saltness and temperature of sea-water.

Sir Humphrey was led to the discovery by the same principle which led him to that of the decomposition of the alkalies, namely, that chemical affinities might be balanced or destroyed by changing the electrical states of the substances; it thence appeared that the corrosion of the copper might be prevented by its being brought, by contacts with another metal, into a negatively electric state; and he had accordingly found that, by the contact of tin, forming part of an electrical circuit of two parts the surface of the copper, the desired effect was completely obtained. Other metals, positive in respect to copper, may be employed, as lead and zinc, but tin is preferable, on account of its capability of being brought into complete contact with the copper by means of solder, and also because its submuriate is easily detached from the metal.

The experiments were made with ribbands of tin, and it was found that such ribbands, equal in substance to only 1-500th part of the copper, effectually prevented the corrosion of the latter. They were so entirely satisfactory that not the smallest doubt can be entertained of the perfect success of the method or practice, and the Lords Commissioners of the Admiralty have made arrangements for enabling the president to repeat them on the largest scale, on ships of war.

It is probable, Sir Humphrey observes, that this method, besides preventing ascidation, will also prevent the adherence of vegetable and marine animals to the sheathing.—*Monthly Med. Chir. Rev. March* 1824.

9. M. Dupuytren's *Case of Wry Neck.*—When this deformity is occassioned either by spasmodic contraction of one of the sterno mastoid muscles, or paralysis of the other, it may sometimes be relieved by an operation. In a case of the former kind it would be requisite to divide some of the fibres of the diseased muscle; in the latter a sufficient quantity of the corresponding healthy one would require to be cut, in order to establish a uniformity of action between the two.

The history of the following case may serve as a guide in practising the operation, as well as one proof of its success.

A little girl about ten years of age, whose neck, or rather her head, had been awry for three years, owing to a permanent spasmodic contraction of the sterno mastoid muscle of the right side, was admitted into the Hotel Dieu, Paris, early in January 1822. On the sixteenth of that month the operation was performed by M. Dupuytren as follows.

The patient reclining against an assistant, a puncture was made, with a straight narrow bladed bistoury, through the integuments just on the inner border of the sternal extremity of the contracted muscle. The blade of the bistoury, being flatly opposed to the muscle, was pushed cautiously behind it, the point being directed forwards and outwards till it protruded just on the outer side of the clavicular border. The edge of the bistoury was then turned towards the muscle, and a sufficient quantity of its posterior fibres cut to allow of the head being placed erect: the instrument was then withdrawn.

In this way the integuments escaped being divided, and a future scar was prevented; a very desirable object, the patient being a female.

The cut edges of the muscle were kept asunder by depressing the clavicle, and inclining the head to the left side. The former was effected by binding the right hand firmly to the foot, the knee being bent; thus the clavicular fibres of the deltoid drew the bone downwards; the latter by a roller passed round the head and under the left axilla.

The patient was kept in bed; and at the end of thirteen days the punctures were healed, and she had free motion of the neck, though from long continued habit, she still turned her face to the left side. The bandages were re-ap-

plied, and the same bodily position maintained, till the 21st of February, when they were finally taken away, and the patient pronounced cured, the head being but very slightly inclined to the right side, and having free motion in every direction.

In operating on the male, the fibres may be cut on the anterior surface of the muscle, an incision being first made through the integuments. Inclining the head to the opposite side by a roller, and filling the wound with lint, will then be sufficient to keep its cut edges asunder.—*Quar. Jour. of For. Med.*

10. Mr. Houlton *on the treatment of Intermittents.*—During the time that I had the care of a military hospital on the coast of Kent, intermittents were very prevalent amongst the troops, and many cases proved extremely obstinate, resisting all the ordinary means of cure. In several of the protracted cases, I was induced to believe that the affection was maintained by habit. With this view, I had recourse to a continued local stimulus; and frequently the concatenation of diseased action was broken by this measure, and recovery effected. I generally ordered a small blister to be applied between the shoulders, on the approach of the cold stage, and to be repeated every six hours down the course of the spine, until after the time of the next expected paroxysm. I am disposed to attribute the benefit derived from the blistering more to its engaging the attention of the patient by its continued action, than to counter-irritation; for the cases here alluded to were not those in which there was evident visceral congestion. I am aware that Boerhaave has recommended rubbing the spine with oleum succini, but blistering I have not seen advised in this disease.

Another mode of treatment for intermittents, which I am disposed strongly to recommend, is cinchona, taken in a dry state, or rather swallowed without admixture with any extraneous fluid. In very many cases, both recent and chronic, and of various periods of duration, it has been singularly beneficial. The Medical Board of the Army, whose solicitude and exertions for the health of the soldiers, and whose prompt attention to every means calculated to benefit the sick, were ever conspicuous, suggested, that in those hospitals which were crowded with intermittents, a kind of gingerbread should be made, by mixing equal parts of powdered yellow bark and flour, spiced with ginger and carraway-seeds, and made up with the ingredients, and in the mode used for what is called thick gingerbread: of this a piece, the size of a walnut, was to be given a few hours before the fit was expected. One dose, in many cases, put a period to the disease; and in other cases, in which bark, given in the usual manner, had failed, it was followed by happy results. It was taken without any disgust; and so convinced were the men of its efficacy, that when our supply became short, they were ready to contend for it, and considered those favoured to whom it was given. I believe that bark, taken in this way, as it must be well embued with saliva before it can be swallowed, to be less oppressive to the stomach, as well as more agreeable to the palate, than when given in substance in the common vehicles; and it deserves a trial in other diseases which require that remedy.—*Lond. Med. Rep.*

11. Mr. Ward's *cases of Aneurism of the Aorta.*—The three following cases of aneurism of the aorta occurred within a very short period; they evinced many of the symptoms of cynanche laryngea when it assumes a chronic form, and sufficiently proved the difficulty of diagnosis between these two disorders. As every circumstance that can throw light on so interesting a subject as aneurism of the aorta most assuredly is, must be acceptable to the pathologist, I am induced to place the particulars of these cases before the Profession.

Case 1.—Mary Jones, ætatis twenty-three, applied for relief December 11th, 1822. She had been ill four months; her complaints commencing with cough and expectoration, which were worse at night, being unable to lie down for some hours. At this date she perspired very freely, which she attributed to the exertion of coughing, and complained of pain in the trachea just above the sternum, which was greatly increased by deglutition, solid substances always being returned: fluids were swallowed easily. Her face was sometimes

flushed. Pulse 96; bowels costive; urine plentiful, high-coloured, and depositing a lateritious sediment; feet very cold.

She received constant medical attendance till her death; her symptoms, notwithstanding, remained for the most part unrelieved. She was purged; leeches were frequently applied to the throat; blisters were employed; and the ung. antim. tart. was resorted to till it produced a pustular eruption, which afforded her some little benefit. In the course of her illness, she had three or four sudden attacks of dyspnœa, which threatened her life; they appeared to be produced by a large collection of mucus in the bronchial tubes: when in this state, she always experienced much relief from emetics.

June 4th.—Complained of pain and fulness above the right clavicle, but no pulsation was felt there: these sensations were relieved, and appeared to subside, in consequence of the application of a few leeches.

July 2d.—From irritation produced by a blister, inflammation came on under the left breast, which terminated in suppuration, during which time, until the abscess healed, there was a complete cessation of all the bad symptoms; —her breathing was very comfortable; she could lie down at night; and the mucous expectoration was much diminished. As she now felt herself much better, she very incautiously over-exerted herself, when all the symptoms became aggravated: respiration was now performed with difficulty; her lips and countenance were of a pallid hue; the mucus in the trachea became increased in quantity, and was expectorated with difficulty, and cold sweats supervened. This state continued for a few days: she sank under it on the 6th August, 1823.

Dissection.—On examination of the body, the following appearances presented themselves:—No disease was observed in the larynx. The trachea, just above the bronchiæ, was so completely compressed by an aneurism, as to bring its anterior and posterior sides nearly into a state of approximation. The lining membrane of the trachea presented a red blush, without any evidence of suppuration.

The aneurism was of considerable magnitude, and arose from the arch of the aorta, having a sulcus in its centre filled by the trachea. There was another aneurism in the aorta, where it passes between the crura of the diaphragm, which had produced much absorption in the bodies of three of the vertebræ.

Case 2.—John Berry, ætatis thirty-four, has been ill twelve months. He was taken at first with cough and shortness of breathing. The cough was very troublesome, and without expectoration.

August 5th.—At this time he had very considerable wheezing during inspiration, which was occasionally accomplished with much difficulty. He also complained of some pain in his chest; of very difficult deglutition, being altogether unable to swallow solid food; and even fluids were taken with much uneasiness. He had been unable, for the last six weeks, even to sit up, being obliged to bring his head forwards, resting it nearly on his knees: raising himself into the erect posture only for a few seconds caused him the greatest distress. His voice was scarcely altered.—Ten leeches were ordered to his throat, and the pulv. ipecac. comp. was given with hydr. subm. in small doses every six hours.

August 6th.—Remained nearly as yesterday. Towards the evening, the dyspnœa being much increased, it was thought he might receive some benefit from the operation of tracheotomy, which was accordingly performed. At the time of the operation, he lost a considerable quantity of blood suddenly from some varicose veins, and he was somewhat relieved. This relief continued, however, but a short time, as all the evil symptoms gradually increased. He was unable to keep a canula in the opening, it being constantly forced out.

August 7th.—Much worse; dyspnœa greater. He was unable to swallow any thing. His pulse, which formerly was rather full and not much accelerated, now faltered, and on the following morning he died.

Dissection.—On examination, an aneurism was found in the arch of the aorta,

occasioning much pressure on the trachea immediately above the bronchiæ. The aorta was much enlarged throughout its whole length. The lining membrane of the trachea was discoloured and covered with mucus. Somewhat extensive inflammation was present in the cellular substance of the muscles of the neck, on the right side, which was attended with a large deposition of coagulable lymph.

Case 3.—August 5th.—William Friar, ætatis thirty-one, had been ill about six weeks. He was first affected with pain in the left side of his chest, which came on, as he supposes, in consequence of a severe cold. He afterwards felt a general soreness in his chest, with a sense of suffocatian. His breathing became difficult, and inspiration very stridulous. His speech has been impaired about three weeks. He was, at this time, unable to speak above a whisper; had no pain in the larynx itself, but considerable pain lower down, about the centre of the chest; was unable to swallow solids, and fluids passed with difficulty. Cough was troublesome; expectoration much, and at times with difficulty; tongue slightly coated; bowels open; sleep disturbed by distress in breathing. The pulse in the right arm was scarcely to be felt; in the left arm it was nearly natural.

He was bled to the extent of sixteen ounces; a blister was applied to the throat, and calomel and Dover's powder were given every six hours.

August 6th and 7th.—Twelve leeches were applied each day, and a blister between the shoulders. He remained unrelieved.

8th.—He fell down dead in the act of walking.

Dissection.—The first remarkable circumstance which presented itself on examination, was the right carotid artery crossing the trachea immediately below the cricoid cartilage, it being thrust into that situation by an aneurism from the arch of the aorta. The aneurism pressed on the two bronchiæ, and upon the œsophagus, into which it had ulcerated and burst; and about two pounds of coagulated blood were found in the stomach. The ulceration in the œsophagus was to a very considerable extent. The larynx was healthy.

Remarks.—From these three cases, it appears that an aneurism in the aorta may produce, from its mechanical pressure, a train of symptoms which bear a very close analogy to cynanche laryngea. In the first case, the continual existence of the exciting cause induced that state of inflammation of the membrane, which we should naturally expect to find in this latter disease. When we observe that the application of a few leeches was sufficient to relieve the urgency of these symptoms, we should hardly have been inclined to think beforehand that there existed any arterial tumour, upon which this small bleeding could have had such an effect. The relief too which was experienced by the counter-irritation in the breast would have tended, in a great measure, to confirm the opinion that it did not depend on any mechanical cause which was constantly present, but upon an inflammatory action originally existing in the membrane itself.

The second case, however, does not bear so great a similarity to cynanche laryngea. There were symptoms which might perhaps have led us to a different diagnosis: the difficulty of keeping the head erect, and the unimpaired power of the voice, are not symptoms which we are accustomed to find present in cynanche laryngea, but which were satisfactorily explained by the examination of the body.

The third case more nearly resembles cynanche laryngea than either of the others; the stridulous inspiration was better marked, as well as the loss of voice and the difficulty of deglutition. In this case there existed a circumstance which, perhaps, may not be altogether undeserving of remark. The operation of tracheotomy was directed to be performed, if this man had suffered a sudden attack of excessive dyspnœa. His sudden death, however, prevented the operation. It was mentioned, when detailing the appearances on dissection, that the right carotid artery was found crossing the trachea obliquely, and immediately below the cricoid cartilage: if, therefore, the ope-

ration had been performed, it is not improbable that this artery would have been opened into, more particularly when we consider that the violent action of the trachea would render it difficult to have observed the pulsation of the artery in this unnatural situation.—*Lond. Med. Repository.*

12. *Further Account of the Extraction of Calculi from the Bladder, without the Use of any Cutting Instrument.* By Sir Astley Cooper, Bart.—*Case* 1. Mr. Brodie has communicated to Sir Astley Cooper the particulars of a case of this kind. A gentleman, aged 70 years, had frequent desire to make water, with more or less difficulty in voiding it, sometimes requiring the use of the catheter. On introducing the sound, Mr. Brodie distinctly felt some calculi, previously to the sound's reaching the bladder; and, on examination being made by the rectum, a number of calculi were felt in the situation of the prostate gland, apparently contained in the cyst, and sliding on each other under the pressure of the finger. On the first introduction of the new forceps, Mr. B. removed two calculi only; but, in the second attempt, six or seven were brought away of a larger size. The operation was repeated ten or twelve times, at various intervals, in the course of six weeks, and, in all, about 60 calculi were extracted. The largest measured half an inch in one diameter, and five eighths of an inch in the other, having four sides and angles. At the end of July, the symptoms were very much relieved, and no more calculi could be discovered:—But, having undertaken a journey, he was again seized with difficulty in voiding his urine, and, on returning to town, another calculus was extracted from the membranous part of the urethra by the same instrument.

Case 2. Sir W. B. aged 67, had suffered from long and repeated attacks of gout, from the 35th to the 60th year of his age, since which, the attacks are less frequent, and much mitigated. It is seven years since he first passed gravelly concretions, and these have continued since that period. In 1820, after considerable walking exercise, he passed a quantity of what appeared to have been blood—and fast riding, at any time, induces the same discharge. Sir A. Cooper and Sir Gilbert Blane now attended the patient, and, on being sounded, it was discovered that there was a stone. As it appeared to be a small one, Sir Astley proposed a trial with the new forceps. On the fourth attempt, a stone, weighing 17½ grains, was extracted, on the 18th of July. Some time after this, another calculus was discovered, but, being too large, a dilatation, in this instance, was made of the urethra by the introduction of bougies. A stone was then extracted, weighing 54 grains, on the 28th of August. Some pain in making water, swelling of the corpus spongiosum, and urethral discharge, followed this last operation; but they subsided under the application of poultices and fomentations.

When the size of the stone is considered, it need not excite surprise, that much difficulty was experienced in the extraction. It was in that part of the urethra near the glans, that the chief impediment was found, and the stone could easily (if it had been thought necessary) have been removed from thence by incision. Upon after-thought, Sir Astley is of opinion that, in removing a stone of equal magnitude, it would be better to make a small incision into the urethra, anterior to the scrotum, than employ force for its extraction through this narrower part of the channel.

In a communication from Sir Gilbert Blane to Dr. Cooke, on the above case, Sir Gilbert observes that—"had it not been for the new method so happily conceived, and so skilfully executed, by Sir Astley Cooper, the patient would have been subjected either to the sad sufferings of the stone, or to the pain and danger of lithotomy."

Case 3. Mr. King, aged 66, mariner, came under Sir Astley's care on the 30th of October, 1822. On sounding, it was found that he had a calculus in the bladder. Sir Astley passed the long urethral forceps into the bladder, and, in a few minutes, extracted four calculi. On the first of November, he extracted three calculi—on the 4th, five more—on the 7th, twelve calculi—on

the 11th, two—and, on the 13th, three more. On careful examination, no more stones could be perceived.

From Mr. Brodie's patient two other calculi have been since extracted by the same means; and Sir Astley has lately removed from a young person, of the name of Errington, a calculus of moderate size, and enabled two others to pass, by withdrawing the instrument in its dilated state; in consequence of which the stones passed, in the afternoon of the same day, in a copious discharge of urine.—*Johnson's Journal, March* 1823.

13. *On the Treatment of Infectious or Typhoid Fever.* By JAMES PARKINSON and J. W. K. PARKINSON, Esquires, Members of the Royal College of Surgeons.—The investigations which, with so much anxious zeal, have been lately made respecting the nature and treatment of typhus or infectious fever, have considerably advanced our knowledge on this highly important subject. The injurious effects of stimulants, either in the form of medicine or of diet, have been determined; the advantages derivable from bleeding and other kinds of evacuations have been ascertained; and the symptoms and mode of treatment accompanying morbid congestions have been pointed out. But although much is accomplished, somewhat still remains to be performed: and one of the first claims on our exertions appears to be the ascertaining of the best mode in which some of the several curative indications may be most safely, and, at the same time, most efficiently acted upon.

The authors of the following observations have under their care the sick poor of an extensive and populous parish, and consequently have their assistance frequently claimed by persons suffering under the malignant influence of infectious fever. The fever here referred to commences with rigor or shivering, followed by loss of muscular power, increase of heat, pains in the head, loins, and limbs, the tongue, which at first was white, becoming loaded with a dark brown fur. The gums also become foul, from the adhesion of a tough brown mucus, which extends even partly over the teeth. As the malady advances, the heat becomes considerably augmented; petechiæ, and vibices frequently occur; and, at length, the powers of the nervous system failing, every faculty becomes impaired, and death, preceded by convulsions, ensues.

The consideration of the antecedent circumstances seems to determine the immediate occasional cause of this disease to be a peculiar contagion; and the uniform language of the sufferers, whilst describing the symptoms of their malady, shews that the injurious effects are first perceived in the brain and spinal marrow, and are thence rapidly extended through the whole of the nervous system. On these considerations, the following mode of treatment has been adopted.

Immediately on application for relief the patient is conveyed to the fever-ward. The body is then cleansed; and, if required, the warm bath is employed, the hair either thinned or entirely removed, and clean body linen, with an upper clothing of woollen, put on. Bleeding, if required, is then employed; and an emetic or cathartic, if hitherto omitted, and now required, is had recourse to, the cathartic medicine being repeated as circumstances may require. A blister is applied to the nape of the neck, and in the neighbourhood of any part in which congestion is threatened. The patient is then seated in a chair with a railed back, so high as well to support the head whilst leaning backwards; the legs, if required, being supported horizontally at a convenient height, and he is then placed in the current of fresh air passing upwards from the windows and the lower parts of the building through the openings in the ceilings and roof. As the patients gain strength, they are allowed to change their situations, either towards or from the windows; and, when able, which, in general, is within two or three days, they are permitted to walk about the ward: but are very rarely allowed to lay on the bed in the day-time.

The regimen is composed of tea, toast-water, barley-water, gruel, milk-

pottage, and, as the tongue becomes clean, broth is added; but beef, wine, &c. are prohibited through the progress of the disease, and even of recovery.

The beds and pillows, with a view to prevent the accumulation of heat about the head and trunk, are loosely filled with straw. The patients are requested to lay as much as they are able on their sides, and are required to quit their beds by nine o'clock of the morning. The advantages derivable from this arrangement, as well as from the exclusion of the patients from their beds during the day-time, will be perceived, on ascertaining, by interposing the hand between the back of the patient and the subjacent bed-clothes, the vast degree of heat which is there accumulated.

The results from this mode of treatment have been extremely satisfactory. Direct amendment and speedy recovery have been obtained in a very large proportion of cases. Out of 187 patients, only five were lost: two of whom were between seventy and eighty years of age; two others were reduced to a hopeless state of weakness previous to their application; and one sunk from extensive sphacelations, induced by previous long-continued confinement to her bed.

Such success excited the hope that, by avoiding stimulants, opening the bowels, keeping the patients in an *erect position, and allowing the free access of cold air*, the destructive powers of this malady might be effectually opposed. A longer trial has not only confirmed this hope, but made it appear to be a duty to make known the results in those cases in which it has been employed.

But although the success attendant on this mode of treatment of the sick poor is indisputable, it is to be lamented, and, at first view, it may be considered as very difficult of explanation, that corresponding success is very seldom obtained when the attempt is made in the chambers of those who are surrounded by the luxuries or even the comforts of life. But it is matter of extreme regret, that the strong influence of habits and prejudices generally, under these circumstances, prevent the regular and strict employment of those measures on which the wished-for success depends.

In these situations, it will too frequently be found that the anxious friends of the patient, feeling for, and fearing to aggravate his immediate sufferings, may not be able to bring themselves to resolve on harassing him with those changes and privations to which they know he would not be disposed to submit, and of the propriety of doing which they do not themselves feel sufficiently assured. It would be with hesitation destructive of perseverance, that they would risk the removing him whilst in a burning heat or profuse perspiration, and almost enveloped in a feather bed and heavy bed-clothes, to a *paillasse*, with scarcely any intervening, and but few covering bed-clothes, and on which he is to be allowed to remain only during the night. In the day time, whilst his feelings of weakness are such, that to be allowed to rest at his length is his most earnest petition, the propping him in a chair, but slightly covered, and exposed to a current of cool air, would not often be strictly complied with; nor after he had been for several days without food, would the tender nurse be disposed to refuse the addition, to his tasteless sippings, of a little wine or some supposed harmless cordial.

But, in proportion to the granting of these indulgences, and thus augmenting the injurious determination to the cerebral and spinal system, the chances of recovery are diminished. On a strict observance of the prescribed mode will depend the success of the attempt to extinguish the disease. Death is threatening: and to effect a rescue, the proposed measures must be adopted and employed with unyielding resolution.—*Lond. Med. Repos. March* 1824.

14. *Carbuncle.* Mr. Blackadder, in his valuable treatise on hospital gangrene, has recommended the application of escharotics in cases of carbuncle. Mr. Swallow was called in by Lord Clermont for a well-characterized affection of this kind, situated on the back of the neck, over the cervical vertebræ. He had but just recovered from a similar attack under the able care of

Mr. Guthrie of London. Mr. Shallow immediately made a deep crucial incision through the whole extent of the carbuncle, and filled up the incised spaces with dossils of lint well moistened in equal parts of the liq. arsenicalis and water, the fluid application being renewed every hour or two. After twenty-four hours application, a slight eschar began to form, the surrounding inflammation and pain evidently diminishing. Twelve hours longer continuation produced a sufficient eschar, and the pain and inflammation ceased. A common poultice was then applied frequently till the eschar separated and left a clear wound, which was easily healed.

Mr. Swallow, who had charge of three large hospitals in Spain, appropriated solely for hospital gangrene, never saw any ill effects resulting from the application of arsenic in the gangrene above-mentioned. The quick formation of the eschar, he believes, prevents the absorption of the deleterious substance.—*Johnson's Journal, March* 1824.

15. *Diabetes.*—A case is related of diabetes, in a man 33 years of age, where the disease resisted various methods of treatment till—"hard work, aided by warm clothing, and a scruple of Dover's powder at night, entirely removed the disease." An inordinate and unhealthy action of any one organ is pretty generally restrained by increasing the function of some other organ. It is evident that the skin, as an extensive outlet, sympathising powerfully with almost all the glandular viscera, is an important agent in the removal as well as in the production of diseases. Its agency, therefore, should generally be employed in diabetes. Dr. Carter's practice, he observes himself, is not new—but this is of little consequence, provided it is useful.—*Ibid.*

16. *Injection of Opium into the Veins.*—From a great number of observations and reflections on the operation of poisonous substances, M. Coindet comes to the following conclusions.

1mo. That there are but two classes of poisons—the first class comprehends the caustic and irritating substances—the second comprehends all the others.

2^{ndo}. That the poisons of the last class when taken into the stomach possess an intensity of action in an inverse ratio to their nutritive properties.

3^{tio}. That the decomposition of substances in the stomach varies with age, sex, health, and disease—in short, with the powers of digestion.

4to. That the injection of medicinal substances into the veins may be very useful in certain diseases where the digestive function is so energetic that the said medicaments would be quickly decomposed in the stomach, and consequently prevented from entering the circulation unchanged, and acting on the system according to their peculiar properties.

The following remarkable case will illustrate these conclusions.

In December 1819, M. Coindet was called in consultation with M. Herey, to Jean Paterson, a young girl of 14 years, who was said to be labouring under violent tetanus. Three years previously, having been frightened by a dog, she fell into a nervous state, which soon assumed the form of well-marked hysteria. During four months the attacks took place every day at irregular hours. The catamenia now appeared, and the hysteric paroxysms ceased. The catamenia became obstructed, and the hysteria returned in the following manner. While sitting one day, at dinner, she was suddenly seized with rigid locking of the jaws, and in a few minutes afterwards became insensible. In two or three days the spasms extended from the head to the trunk, and assumed the appearance of real tetanus, still she remained insensible. In this state she had continued a week when our author first saw her. Various medicines were tried, but with little effect. The disease gradually ceased in about three weeks. In the middle of January 1820, M. Coindet was again called to her, and found the same symptoms as before described, but in a more aggravated form. The spasms were more violent than in the majority of cases of idiopathic tetanus. They commenced very irregularly in attacks of emprosthotonos—the head sometimes coming with violence against the knees. Opisthotonos succeeded; the body took the form of an arch, and rested on the heels and occiput. In these paroxysms, which sometimes lasted 20 minutes

or more, the whole muscles of the body participated in the painful tension. The respiration was embarrassed—the pulsations of the heart became feeble and irregular—and the poor girl was threatened with suffocation! This horrible agony was broken up by some brisk convulsions, and succeeded by an interval of tranquillity. This succession of paroxysms had now lasted three weeks, and was increasing in degree when M. Coindet visited the patient. Her ordinary attendant had administered an ounce of laudanum for a dose, without producing any effect on the system, which led our author to suppose that the remedies were decomposed in the stomach, and did not reach the circulation unchanged. It was therefore determined to inject a solution of opium into the veins. A scruple of opium was dissolved in distilled warmed water, and then filtered. There was a residue of 12 grains on the paper, but the narcotic principles were almost all in the solution. In the presence of several medical gentlemen, an opening was made into the vena basilica of the right arm, and the point of a fine syringe introduced, when a dram was injected every five minutes, taking care not to allow any air to pass in, and to move the point of the syringe as little as possible in the vessel. At the *first* injection the respiration became more regular and less rapid—the state of the pulse and the other symptoms remaining the same. At the *second* injection the breathing became quite natural—the pulse rose to 100 and got fuller—the surface became a little elevated in temperature, and soon broke out in a gentle perspiration—the spasms were less violent—and the patient heaved some deep sighs, like a person awaking from sleep. At the *third* injection the pulse rose to 112, stronger and fuller—the skin became more coloured and covered with sweat—the convulsions ceased almost entirely—and she articulated some words indistinctly. At the *fourth* injection the breathing became quicker, and the pulse rose to 120, very full, the skin being red, and the perspiration abundant. Several signs of returning sensibility occurred. At the *fifth* injection the foregoing phenomena were augmented in degree—the sight and hearing were entirely restored, the patient recognizing the physicians—she articulated distinctly some sentences, but like a person awaking out of a sleep troubled by dreams.

The operation was not followed by any alarming symptoms. The patient experienced some sickness at stomach in the night, with a little irregularity of breathing and precordial anxiety. The vein also showed signs of inflammation, which were subdued by repeated applications of leeches and icy lotions in the track of the vessel. The patient described the effect of the injections as if a torrent of liquid fire had been poured through the veins of the arm, concentrating in her chest, and thence dispersed over the whole body, attended with violent heat and pricking of the skin. These sensations, she said, were of a most painful nature. She had a slight return of the spasms four days after the operation; but they readily yielded to the internal exhibition of opium. After an interval of complete health the disease again returned, but not in so violent a degree, as formerly. The use of the bath, and a discontinuance of strong irritating purgatives, which she was in the habit of taking, promptly restored her to health.

17. *Bodies in a State of Putrefaction.*—As the study of anatomy in this country is environed with so many difficulties, it becomes a great object in every point of view, to preserve bodies, in our dissecting rooms, as much as possible in a state of freshness. M. Labarraque, in a memoir lately read before the Academy of Medicine, avers that a fluid composed of one pound of chloruret of lime in 30 or 40 quarts of water, when applied by means of a cloth dipped in it, to bodies in a state of putrefaction, will remove or prevent the fetor. He also proposes the substitution of liquid chloruret of lime for the acid gases commonly employed as disinfecting agents. This we imagine, is not of very great consequence, as we believe that pure atmospheric air and ventilation are the best and surest disinfecters. Where we have fetid smells covered by acid gases, we are not apprised of the presence of the enemy.

P. S. Since writing the above, we observe a short paper in the *Journal General de Medecine* which bears on the present subject.

M. Orfila was consulted by the police whether poison could be detected in a body that had been buried so long as 30 days? He answered in the affirmative, and was directed to exhumate a corpse and examine it in a medico-legal point of view. The body had been buried 32 days, and when exposed to the open air, exhaled such a horrible fetor, that it could not be borne at two hundred yards distance. After three hours exposure, the fetor was little diminished, and it was determined to try the aspersion of sulution of chloruret of lime. The mephitic exhalations ceased immediately; and Orfila and his assistants were enabled to prosecute the investigation for several hours without inconvenience. Arsenic was incontestibly detected in the intestines. In rendering homage to the merit of Labarraque's discovery, M. Orfila is of opinion that by means of the article in question, we may proceed without danger or difficulty, to the examinations of bodies that have been several months interred.—*Ibid.*

18. *Opium in Acute Mania.*—Mr. Allen, an intelligent surgeon in Leicester Square, London, has published a case illustrating the utility of large doses of opium in a paroxysm of acute mania. The patient had fallen down in a fit, but was found by Mr. A. talking incoherently, and with a dark brown tongue, and full firm pulse. He was bled to 32 ounces, and then had calomel and colocynth to open the bowels. Another epileptic fit occurred the succeeding day. Leeches, general bleeding, nauseating doses of antimony. No diminution of the mental alienation. Thirty-six leeches to the scalp, calomel and extract of rhubarb every four hours. Next day he was more outrageous than ever. Forty ounces of blood abstracted, which gave but temporary relief. Confined by a straight-waistcoat. Two grains of opium and ten of hyoscyamus statim, and to be repeated every four hours till sleep or quietude were procured. Passed a more noisy and restless night than ever. In the course of next day, however, he became quiet and fell into a state of stupor, from which he awoke refreshed, and soon regained possession of his mental faculties. His mouth was now affected by the calomel he had taken. He was a man addicted to drink, and the disease appears to have been closely allied to delirium tremens. It is probable that no extent of bleeding would have checked the disease had not opium been administered.—*Ibid.*

19. *Prussic Acid.*—It is better than two years since Dr. Macleod published some observations on the good effects of prussic acid in some cases of dyspepsia. More extended experience has confirmed him in regarding this remedy as of considerable power in those forms of indigestion which are attended with much pain in the stomach and flatulence. Palpitation of the heart is not an unusual attendant on dyspepsia, sometimes simulating angina pectoris. In organic affections of the heart, too, we very generally have symptoms of dyspepsia, which aggravate the original disease. "In such instances of morbid action of the heart brought on by dyspepsia, or of dyspepsia sympathetic of organic disease of the heart, I am inclined, says Dr. Macleod, to think that much benefit is to be obtained from the employment of prussic acid."—*Ibid.*

20. *Blood-letting in Hydrothorax.*—Bleeding in dropsical affections is no new remedy; but as hydrothorax is a formidable disease, and as there is a considerable antipathy against venesection existing among great numbers of the profession in a malady characterized by debility, we deem it proper to notice such cases as bear upon the subject in a practical point of view.

Mr. B. was called to a woman 50 years of age, who was generally œdematous with great oppression on the chest, inability to lie down, frequent cough with watery sputa, the sensation of a fluid in the chest when the body was changed, countenance œdematous and pallid, urine scanty, and not coagulable by heat, thirst, pulse 90, small and hard, disturbed sleep. After evacuating the bowels, it was determined to make a decided impression on the system,

by drawing blood till syncope was produced. This required 36 ounces. She felt greatly relieved, and saline purgatives were continued, with supertartrate of potash in large doses. Two days afterwards, bleeding was again employed to syncope. The urine now increased in quantity, the pulse fell, the thoracic symptoms decreased. She rapidly recovered. The same practice was employed with success by the same writer in another case. Mr. Braid is deceived when he thinks that the presence of albumen in the urine, as shewn by its coagulating by heat, is considered as the *only* criterion for the utility of bleeding. Dr. Crampton and others have shewn, that little or no dependence is to be placed on this criterion.—*Ibid.*

21. *Œsophagotomy.* The following is the plan recommended by Lisfranc, in cases of foreign bodies being lodged in the gullet, and incapable of being withdrawn by fingers or forceps.

"The patient should be seated in a chair, with his head reclining backwards on the breast of an assistant; the operator placing himself in front, takes the scalpel or bistoury, and holding it like a pen, commences his incision on the inner border of the left sterno mastoid muscle, opposite the superior edge of the thyroid cartilage, and continues it down to the lower edge of the cricoid. An assistant now draws the carotid sheath to the outer edge of the wound to secure it from the knife; while the operator, cutting carefully through the cellular tissue, exposes the œsophagus, where it inclines to the left side from behind the trachea. A canula with a grooved stilet, or the sonde à dard formed like a female catheter, but considerably longer, is to be passed by the mouth down the œsophagus, inclining its point to the left side, which causes it to be readily felt from the external wound. The stilet is now to be pushed forwards through the coats of the œsophagus, when the operator feels with his finger along its concave edge, to ascertain that no large arterial branch be situated on it, and then passes a bistoury into the groove, which directing it onwards opens the œsophagus. He now feels for the foreign substance, which is to be extracted by a pair of dressing forceps passed along his finger."—*Ibid.*

22. *Extravasation within the Cranium.* A man, 55 years of age, fell from a scaffold, and pitched with his head on the pavement. He was taken up, not insensible, placed in a fiacre, and carried home. There he soon complained of weight in his head, and pain in his hands. About 8 ounces of blood were taken from the arm—he presently lost the power of speech, and he was conducted to the Maison de Sante. *Symptoms*, five hours after the accident; abolition of the intellectual faculties and sensorial functions—inability to raise the eyelids—dilatation of the pupils—breathing free—pulse natural—involuntary discharge of urine—deglutition unimpaired—incomplete paralysis of the members of the left side—two wounds of the integuments of the cranium, one above the *right* ear, the other on the *left* side of the occiput. He was a second time bled, and evinced some return of sensibility, but soon relapsed again.

Next morning, M. M. Beclard et Dubois examined the patient. M. Beclard pronounced that there was extravasation within the cranium, on the right side, under the small wound, the paralysis being on the opposite side. The crown of the trephine being applied, and the osseous disk removed, a coagulum of blood was discovered an inch in depth, the limits of which could not then be ascertained. Two more discs were removed by the trephine, and the apertures brought into one. The extent of the clot was then ascertained, and found to be very considerable, being four or five inches in diameter. At different times during the operation, the patient gave signs of great impatience. On the internal surface of the third disc of bone removed, there was a fracture, and a projection or spicula of bone. No indication of this fracture was apparent on the outside of the skull. There was a wound of the meningeal artery, whence vermilion blood was still issuing. As the man was far from being en-

feebled, the hæmorrhage was suffered to proceed, no compression of the brain being now feared. By different means the extravasated blood was removed. After the operation, and when placed in his bed, the patient entirely recovered his sensibility, and began to move the hitherto paralysed members of the left side. He then fell into a light slumber, from which he frequently awoke, demanding something to eat. He was without fever, and complained rather of pain in the shoulders and hands than in the head. Next day, the dressings were removed, and the dura mater had risen nearly to a level with the interior aperture. The coagulated blood was almost entirely disgorged. The wound was dressed daily. By the fourth day, suppuration was established—no stool since the accident—gentle laxative, and a glyster—a scanty stool—lancinating pain in the left breast—fulness and frequency of pulse. Sixth day, the pain dispersed—the patient greatly incommoded by the pulsations about the wound. These on the 7th day were greatly increased, with pyrexia and loss of appetite, constipation of the bowels. *Lavements*. 8th day, hardness of pulse, somnolency, yellow tint of skin and eyes, some delirium in the evening, and tendency to coma. Venesection. 9th and 10th days, sensibly better. The dura mater covered by fleshy granulations, follows the cerebral pulsations. From this time the recovery was rapid and uniform.

We consider that the patient ran a very great risk from the neglect of the bowels, and of sanguineous evacuations. Antimonials were prescribed, which served in this case as a substitute for more active depletion.—*Ibid.*

23. *Varicose Veins.*—On the 13th of November, 1823, M. Richerand read a short paper, at the Academy of Surgery, on the cure of varicose veins. For some time past the professor has been in the habit of curing this state of the vessels by a simple longitudinal incision of some inches in length, applying charpie to the wound to prevent healing by the first intention, and to secure suppuration. By this operation the vessels are emptied of the partially coagulated blood with which they are filled, and become entirely obliterated, without any inflammation spreading along the internal surface of the vessels, as is sometimes the case when they are tied or simply cut across. The pain of the operation is by no means severe. M. Richerand refers the Academy to cases which have been cured in this manner by himself and others.—*Ibid.*

24. *Tracheotomy.*—Mr. Liston has lately performed the operation of tracheotomy in two cases—one for œdema glottidis, and the other for injury of the larynx. The case of œdema glottidis was one of pressing danger, and where suffocation was impending. Considerable difficulty was experienced in keeping the tube in the trachea, and the necessity for its presence there has continued ever since, as the aperture of the rima glottidis is not of such dimensions as to enable the patient to dispense with the tube. This case bears the nearest resemblance to that of Mr. Price (related in a former number of this Journal) of any on record. Mr. Price has now breathed through the tube nearly eight years, and is in good health at Portsmouth.—*Ibid.*

25. *Vesico-Vaginal Fistula.*—Dr. Cumin, of Glasgow, has related, in the last number of the Edinburgh Journal, an interesting case of this distressing accident, which was speedily cured by judicious treatment.

The patient was a young married woman, who entered the infirmary five weeks after parturition, with a fistulous opening of the bladder into the vagina, in consequence of a slough coming away ten or twelve days after delivery. Forceps had been used. The poor woman was, of course, in great distress, from the discharge and irritation of the urine. Dr. Cumin had a silver catheter (fixed by means of a contrivance originally proposed by Desault) introduced and retained in the bladder, by which means, in the course of ten or eleven days, the urine ceased to pass by the fistulous opening, and a complete cure was ultimately effected. We think Dr. C. was perfectly right in not keeping any thing in the vagina during the treatment; for certainly a sponge

or other plug there must tend to keep the edges of the wound in the bladder apart.

"The instrument which I employed consisted of an oval steel spring covered with leather, and made so as to clasp round the pelvis and fasten over the sacrum; with straps to pass over the thighs, and prevent it from shifting upwards. In the centre, which rested on the symphysis pubis, a piece of metal was screwed on so as to admit between it and the spring a curved stalk, which could be slipped up or down, and fixed with a screw when properly adjusted. At the lower extremity of this stalk, was an aperture, through which a catheter was passed, and introduced into the bladder—then secured in its place by means of a narrow tape. In this manner a fixed point was obtained, and the motions of the catheter rendered inseparable from those of the bladder and pelvis."

The rapidity of the cure was probably owing, as Dr. C. imagines, to the inflamed and highly irritated state of the parts, which rendered the closure of the opening more speedy when the irritating cause was removed. If such time has elapsed before treatment commences as allows the edges of the opening to become callous, it will be obviously necessary to excoriate them by means of cantharides, or some other vesicating application.

The profession is under obligations to Dr. C. for this case, and the description of the instrument used.—*Ibid.*

26. *Pneumo-Thorax.*—A soldier, of middle age, came into the Military Hospital of Chatham, in the month of January, 1823, and died on the 11th of February. On proceeding to examine the body, it was observed, that the right side of the chest was much more protuberant than the left, and on precussion emitted a hollow sound. When the abdomen was opened, the diaphragm was seen protruding into the right hypochondrium, in a convex instead of a concave form. By putting the body under water and then making an aperture into the right side of the chest, 212 cubic inches of air were collected, besides several that escaped. The inner surface of the pleura was covered with a thin layer of coagulable lymph—the lung of that side was greatly compressed, and on being inflated by a pair of bellows, the air freely passed into the cavity of the pleura on that side, through an ulcerated opening in the superior lobe, where a vomica was detected communicating with the trachea by a large bronchial tube. Various small tubercles, in different states of forwardness, were also found in the right lung.

The air extricated from the chest when chemically examined, was found to consist of 8 per cent carbonic acid gas, and 92 per cent of azotic gas. What then had become of the oxygen (supposing it to have been common atmospheric air when extravasated) and whence came the carbonic acid gas?—To determine the former, common air was injected into the pleura of a dog, and the opening closed. After a lapse of 48 hours the dog was killed, and eight cubic inches of air obtained, shewing slight traces of carbonic acid gas, and consisting of 93 per cent. of oxygen, and 7 per cent. of azotic gas. This experiment, Dr. D. thinks, appears to shew that oxygen was absorbed in a greater proportion than azote, in the case of the dog. In respect to the man, it may be supposed that the carbonic acid gas, as formed in the lungs, had escaped with atmospheric air into the pleura, where it was less readily absorbed than oxygen. To ascertain this last position another experiment was made.

A bladder was filled (about 30 cubic inches) with air, consisting of atmospheric air 80 parts and carbonic acid gas 20 parts. At one end of the bladder was a stop-cock, and at the other a trocar. The latter was thrust through the integuments of the chest on the right side of a dog—the stilet was withdrawn into the bladder, and the air then rushed through the canula into the thorax, being partly forced back again on expiration; the quantity retained being about ten cubic inches. The canula was then withdrawn and the wound closed. The health of the animal appearing to suffer but little, the operation was repeated two days after, on the opposite side, the injected air being 75

of common air to 25 of carbonic acid gas. Twenty-four hours afterwards the dog was killed, not having appeared to suffer much from either operation. About three cubic inches only of air were found in the *right* side, consisting of 18 carbonic acid, 78 azotic gas, and 3 of oxygen gas. The air admitted had consisted of about 20 carbonic acid gas, 63 azotic, and 16 oxygen, shewing apparently, that, during a three days sojourn in the pleura, the oxygen had been absorbed in a greater degree than the azote. Some other experiments were made, tending to shew that the carbonic acid gas was not a secretion from the pleura, but on the contrary, shewing that this membrane has the power or property of absorbing gases, exhibiting a preference for some over others.

A soldier was sent home invalided from the West Indies for hæmoptysis which had succeeded a severe fall on the left side of the chest received about 18 months previously. He was admitted into the Military Hospital, Chatham, on the 9th May 1823. On the morning of the 13th, after a violent fit of coughing, symptoms of pneumo-thorax came on suddenly, and continued increasing till the 21st. The most prominent of these symptoms were, sensation of extreme tightness about the chest and abdomen—rapid and difficult inspirations, between 30 and 40 in the minute—great anxiety and agitation of mind—pulse 130—cold sweats—prostration of strength. On examining the chest, the left side was found to be more prominent than the other, and larger in all its dimensions. It was tense, and, on percussion, sounded remarkably hollow and tympanitic. The heart pulsated on the right side under the mamilla. It was determined to tap the chest. A trocar was attached to an empty bladder, and the parietes of the chest perforated between the 8th and 9th ribs. Only about five cubic inches of air rushed out, shewing that adhesions probably existed at this point. Next day another puncture was made below the left papilla, when a large quantity of air rushed out and distended the bladder. When the bladder was removed, air continued to rush from the chest for several seconds, as if from a blow-pipe. When this ceased the canula was removed, and the wound healed. The relief was great and sudden. The patient continued to improve up to the 17th of June, on which day Mr. Davy's paper for the Royal Society was closed. At this period the patient's appetite was good—his cough but little troublesome—he could lie on the left side—the wounds were healed—and the chest considerably diminished in volume, as well as less tense and tympanitic. The heart, however, could still be felt on the right side, and the fluctuation of a fluid was perceptible in the left. Dr. D. entertained hopes of recovery.

The air which had rushed out into the bladder was found to consist of 93 parts of azotic gas, and 7 of carbonic acid gas, being almost the same as that found in the preceding fatal case.

27. *Communicated by* G. Van Dem Busch, *of Bremen.*

Professor *Ficinus* of *Dresden*, and Dr. *Weese* of *Thorn*, (Prussia,) have made very interesting observations on the use of the terra alumina depurata (gereinigte thonerde,) in cases of obstinate diarrhœa in children. *Percival* was the first who recommended this remedy, in cases of acid in the primæ viæ. *Ficinus* has found that it exceeded all the remedies of the class of absorbents in efficacy, in diarrhœa arising from acid in the primæ viæ. This diarrhœa occurs frequently in children who have not been suckled, and to whom too much nourishment has been given. *Ficinus* uses this remedy, not only in diarrhœa, but also in dysentery. *Weese* gives from five to ten grains at a dose. The best form is the solution of one dram of the terra alumina in six ounces of an emulsion from the poppy seeds, given in the dose of a small spoonful every two hours. I have made myself a trial of this remedy in two cases of diarrhœa, and it has not deceived my expectations.

The little pimples under the tongue of men bitten by a mad dog, which Dr. *Marochetti* first observed and described, have been seen also by Dr. *Baumbach*, in a woman bitten by a mad dog. This woman complained, six

weeks after this accident, of vertigo, of a pressing sensation in the neck, of sleeplessness and great anxiety. The lacerated part, the finger, was painful. When Dr. *Baumbach* examined the patient he found the little pimples, described by Dr. *Marochetti*, under the tongue of this woman, which he opened, and used the *genista tinctoria* recommended by Dr. *Marochetti*. He ordered, likewise, a large venesection, and the patient was directed to take also, morning and evening, two grains of the belladonna. After eight days all the symptoms of hydrophobia disappeared.

The *Belladonna* in very small doses, is recommended as a preservative in scarlatina, by many German physicians. I have made use of this method, and have found that the children to whom I have given the belladonna, have not had the scarlatina, though they have been exposed to the influence of the contagion. Whether the belladonna has been the cause of this accident, or the children have not been susceptible of the contagion, I cannot determine.

28. *Comparative nutritive properties of food according to Percy and Vauquelin.*

In 100 lbs.	of Lentils there are	94 lbs. of nutritive matter.
In do.	of Peas,	93
In do.	of French beans	92
In do.	of Broad beans,	89
In do.	of Bread,	80
In do.	of Butcher's meat, averaging the different kinds,	35
In do.	of Potatoes,	25
In do.	of Carrets,	14
In do.	of greens & turnips,	8

One pound of good bread is equal to 2½ lbs. of potatoes, and 75 lbs. of bread and 30 of meat are equal to 300 of potatoes. 1 lb. of potatoes is equal to 4 of cabbage and 3 of turnips, and 1 lb. of rice bread or French beans in grain is equal to three of potatoes. The plan of low diet generally followed is doubtful. Bread, rice, peas, beans and lentils, should be prohibited, and greens, turnips and cabbages should be given as the least strengthening: Meat and potatoes, regarded in this country as the most nourishing diet, are less so than the articles bread, rice, beans, peas and lentils.

29. *Analysis of some experiments*, performed by a Committee of the College of Physicians and Surgeons of New-York, consisting of Dr. A. H. Stevens, Professors Mott and M'Nevin, on the body of John Johnson, who was hung April 2d, for the murder of James Murray. By a Physician who was present.

The deceased was a stout, athletic man, about 45 years of age. He was suffered to drop about four feet; was suspended about 45 minutes, and remained in his coffin, with a muslin dress over his ordinary wearing apparel, for half on hour. Afterwards he lay 15 minutes, between buffalo skins, making in all, one hour and a half between his execution and his arrival at the College.

The temperature of the air at the time was about 60 deg. Fahrenheit. At the commencement of the experiments, the extremities were three or four degrees below the natural standard; the body not at all so. The muscles were perfectly flexible. The neck was not dislocated. The face and neck above the marks of the cord were livid. The expression of the face in other respects natural.

The galvanic battery consisted of the plates of Professor Griscom, Dr. Smyth Rogers, and Dr. Greenhow, added to those of Professor M'Nevin, in all 328 pairs, of 4 inches square, set in action by dilute nitric, and sulphuric acids; the poles being provided with leaden wires, armed with platina wires at their extremities. As soon as the body was stripped, the surgeon

Exp. 1. Made incisions under the tendo achillis of either side; armed the tendons with tinfoil, and connected them with copper wires, to which the wire of the negative pole of the battery was applied; the positive pole attached to a ball, being introduced into the mouth. The jaws were instantly closed, and convulsive movements of the whole body immediately followed. They were not like the shakings of an ague, nor the tremblings of fear, but rather like a succession of startings from surprise; the sight made the spectators shudder.

2. By an incision behind the sterno-cleido-mastoideus* muscle, Dr. Stevens now laid bare the phrenic nerve of the left side, as it passes over the scalenus muscle, and introduced a blunt probe under it, while Dr. Mott made an opening in the chest, under the cartilage of the 7th rib, with a view to push a metallic plate against some of the branches of the phrenic nerve going to the diaphragm. Some slight respiratory movements followed; but by no means so marked as those described by Dr. Ure. The result which followed another experiment, amply compensated for this partial success.

3. One of the supra orbitary, and one of the infra orbitary nerves were now exposed, armed and connected with the positive pole, while the negative pole communicated with the wire, connecting the tendons at the heel, as in experiment 1. The countenance was at first considerably distorted; it afterwards assumed a more natural play of expression, varying at each successive application of galvanic influence. The motion of the lips reminded several of the spectators of their motion during life. In this experiment, the wire connected with the negative pole lay on the right arm, near the insertion of the deltoid muscle, and caused considerable motion in the fore-arm and fingers.

4. Communication being established between the brachial plexus and the radial nerves at the wrist, and between the former and the ulnar nerves, the arm was contracted by a sudden spasmodic action, and the hand grasped firmly the hand of a person who held it: by changing the position of the arm, it was thrown across the table in different directions.

5. The two radial nerves at the wrist being connected, the one with the positive, the other with the negative pole, both arms and hands were contracted, and the deltoid and pectoralis major were much swollen.

6. In this experiment the positive pole was applied to the spinal marrow by means of a metallic instrument, plunged in between the cervical vertebræ; the negative to the heels as in experiment 1st. The results produced by this arrangement were not so striking as those described in experiment 1st. Had this experiment been made at an earlier period, while the sensibility was undiminished, the effects would probably have been more marked.

7. The anterior and crural nerves being now laid bare, as they came out from beneath Poupart's ligament, were touched with the positive pole, the negative being applied as in experiment 1st. The legs were thrown into strong agitations, and when previously flexed were violently and suddenly extended, performing the operation of kicking.

[At the suggestion of professor Griscom, the course of experiments prepared by the committee was varied, and the wire of one pole applied to the spinal as in experiment 6th, and the other to a catheter introduced into the urethra. No particular effect was observed.]

8. In this experiment the positive pole was applied to the great sympathetic nerve and the parvagum in the neck, and the negative was brought into contact with the branches of those nerves going to the heart. The right auricle contracted distinctly, and slight tremulous motions were observed in the ventricles produced by partial contractions of their muscular fibres.†

* The phrenic nerve is much more accessible in this way, than on the inside of the muscle, as proposed by Dr. Ure.

† The right auricle was found distended with blood; the right ventricle

9. The thorax being now open, and the heart exposed to view, experiment 5th was repeated, (connecting the radial nerves) and the results of experiment 8th were observed, but much more distinctly; the contractions of the right auricle were very evident to all who stood near. Similar results were obtained by applying the pole to the ulnar nerves in place of the radial.

10. Communications between the par vagum in the neck and the left phrenic that runs on the pericardium, partial contractions of the heart were observed, but much less distinct than in the two preceding experiments.

In varying several of the last experiments, by connecting the positive poles with the nerves, and passing the negative over the last 50 plates of the battery, the results seemed to be much more striking, particularly when we consider that the organic sensibility had by this time been much exhausted.*

The lacteals were observed, upon inspecting the intestines, to be beautifully injected, and part of the intestines with their mesentery were detached and passed round the room, so that many saw that which we rarely have an opportunity of observing, the lacteals of a human subject distended with chyle.†

This account of these experiments details merely my personal observations; as far as it goes, it is correct, though I may not have arranged them all in the order in which they took place. I regret very much that I was prevented from taking a more accurate and minute account of their different results, by the number of persons that crowded round the table, prompted by a similar curiosity and excitement, as well as by some confusion that was necessarily produced by the desire of trying as many different experiments as possible, before it should be too late to perform them with success.

The result of some of these experiments, particularly the 10th, will afford an interesting and useful subject of speculation to the pathologist. Dr. Ure conceives that no advantage is to be derived from passing electrive charges across the chest. We see, however, that in those cases where the primary object is to excite the heart to action, this single experiment may be of immense benefit, though for most practical purposes it would be necessary to produce simultaneous, artificial inflation of the lungs, as congestion in these organs would prevent the successful action of the heart.

The contraction of the heart would also probably ensue, from moistening the parts with a solution of common salt, and pressing the end of the conductors against the ulnar nerves in their course over the elbow, or the radial nerves at the wrist, and thus the heart might be made again to beat, and the whole machinery of the body set in motion, when restoration would be perfectly out of the reach of ordinary means.—*Bost. Med. Intel.*

30. *Influence of the Eighth Pair of Nerves on Digestion.* (*Thèse soutenue à la Faculté de Médecine de Paris, par —— Vavasseur*, 1823.) M. Vavasseur, in the course of a set of experiments, by MM. Breschet, Mylne Edwards, and himself, on the influence of the nerves on the different functions, has had occasion to repeat the important researches of Messrs. Brodie, W. Philip, and Broughton, concerning the effects of the division of the pneumo-gastric nerves on digestion; and the experience of the French physiologists has amply confirmed, and even extended the conclusions drawn by those of London. As the results at which they have arrived are of vast importance in respect to the

comparatively flaccid; supposing that the valves which prevented the return of the blood into the former might not be competent to their functions from the emptiness of the ventricle, Dr. Stevens pressed with his hand the blood from this auricle; it was after this that the ventricle was supposed to contract, but I could not satisfy myself of the fact.

* The experiments occupied from an hour to an hour and a half.

† This agrees with the report of his having made a hearty breakfast a few hours before his execution.

but in the veins it is very thin, and exists only in the large trunks. Several microscopical observers have investigated the elementary structure of the nervous tissue; but the most accurate previous researches are those of Mr. Bauer, published not long ago by Sir E. Home. According to Mr. Bauer, it consists of globules of three different sizes, arranged in parallel fibrils, exceedingly fragile, and united by a transparent elastic gelatinous-like fluid. Dr. Edwards confirms the greater part of these facts; but he finds the globules to be all of one size, namely, the same as that observed by him in the globules of the other tissues. He also believes, that an adipose matter is interspersed between the lines of globules; "for when a bit of nervous substance is crushed between two plates of glass, drops are disengaged, which are easily recognized to be fat." No difference exists between the cineritious and medullary matter, in the number, size, or arrangement of the globules; and the nervous structure is the same in the brain, in the nerves, and in the spinal cord of all the animals which were examined. The general conclusions, which the author deduces from his observations, are, that the size, form, and disposition of the elementary particles, are the same in all animals, and that their form and size are likewise the same in all the (soft) textures of the body.

On the accuracy of Dr. Milne Edwards's microscopical researches, we shall not venture to offer an opinion; we presume no person is entitled to do so, who has not examined the same subjects with the same care, and with the same habits of observing, with which he appears to have laboured. We can safely say, however, that his memoir contains nothing to excite distrust; he does not begin it, (according to the general practice of the nation where he has fixed his residence,) by undervaluing and setting aside the labours of all former physiologists; and it is written in a spirit of unostentatious good faith, which his adopted countrymen would do well to imitate, and which cannot fail to win the confidence of the reader.—*Ibid.*

32. *Facts in favour of the contagious nature of Croup.*—(*Arch. Gen. de Medecine, Decembre*, 1823. iii. 536).—We are not aware that any serious suspicion is entertained of this deadly disease being contagious or infectious. The two following facts, however, have led several practitioners in France to entertain an idea that it may propagate itself under certain unknown circumstances; and, though very far from being decisive, they are worthy of being recorded, that inquiry may be excited on the subject. The first set of facts is contained in a former number of the same Journal, (II. 625,) and is stated on good authority. A woman having endeavoured to re-animate her child, newly dead of croup, by blowing into its mouth, was seized four days afterwards with the fibrinous form of laryngeal inflammation. The physician who attended her, and who relates the story, one morning, after examining her throat very narrowly, felt all day a gangrenous odour, and at night was also attacked with the same form of the disease.

The other set of facts furnishes better evidence. A child three years old was attacked with tracheal inflammation, running on to gangrene, and terminating fatally on the sixth day. A lady who was very assiduous in her attendance upon this child, took ill three days before its death, and died in the same manner, after five days illness. A child who lived opposite the first patient, and who used often to visit him, was attacked on the day after his death, and likewise perished in twelve days. And, finally, the physician who attended the two last patients, was seized, in his turn, with a very violent cynanche, which yielded, however, to general and local depletion, without running on to gangrene, as in the three other cases. There has been evidently some peculiarity in these cases; for gangrene is a very rare termination of tracheal inflammation.—*Ibid.*

33. *Proposal to substitute the Cyanuret of Potassium for the Hydrocyanic Acid in Medicine.*—(*Journ. de Pharmacie, Avril*, 1823.)—The greatest inconvenience which attends the use of the hydrocyanic or prussic acid in medicine, is the

uncertainty caused in its strength by its spontaneous decomposition. To remedy this inconvenience, Messrs. Robiquet and Villermé have proposed to substitute for it its combination with potass, procured by decomposing the hydrocyanate of potass and iron with the aid of a strong and continued heat. When so treated, the iron separates, and a part of the cyano-gen is decomposed, while the remainder escapes decomposition, and remains united with the potassium. The cyanuret of potassium may then be separated from the iron and carbonaceous matter by the action of water, which dissolves it, and at the same time converts it into the hydrocyanate of potass. This solution the authors find to be not nearly so decomposable as the diluted hydrocyanic acid itself; and as for the dry cyanuret, it may be kept for an indefinite period, if secluded from moisture. They also find, that the cyanuret and hydrocyanate, formed in this way, possess all the formidable qualities of the hydrocyanic acid. The cyanuret impresses the tongue with a sense of freshness, soon succeeded by acridity: the dissolved hydrocyanate has a cool fresh taste, and like that of bitter almonds, succeeded by slight acridity, if concentrated. A solution of one grain of the cyanuret has as strong a taste as a drop of Gay-Lussac's acid similarly diluted: and a quarter of a grain, in the state of a concentrated solution, causes a momentary palsy of the tongue. A few grains of the cyanuret, placed on the tongue of a dog, produced signs of inflammation, and even traces of corrosion. A tenth part of a grain killed a linnet in sixty seconds, and less than one grain killed a guinea-pig in two or three minutes. One drop of the hydrocyanate, which contained the hundredth part of a grain, killed a linnet in thirty seconds; and half a dram, containing five grains, killed a very large old pointer in a quarter of an hour. These results as to its poisonous properties are conformable with those obtained some time ago by Westrumb of Hameln. (Journ. Complement. xvi. 235.) They leave little doubt that the hydrocyanate of potass will be likewise found to possess all the medicinal virtues enjoyed by the hydrocyanic acid.—*Ibid.*

34. *On the employment of Strychnia and Brucia in Palsy.* [*Journ. de Physiologie, Juillet* 1823. *III.* 266.] M. Andral proposes to substitute for the strychnia, or vegetable alkali of nux vomica, which has been recently introduced as a remedy for palsy, the brucia or alkaline principle of the spurious Angustura bark. The latter principle possesses precisely the same properties as the other, but it is at least twenty times less energetic; and consequently slight deviations from the proper dose would be attended with less severe consequences. He found it necessary, in using the strychnia, to begin with a twelfth part of a grain, for a dose, and he could scarcely give with safety more than one grain, and that only in a patient who seemed peculiarly insensible to its action. In one case, the first pill of the least size caused a pretty severe attack of lock-jaw, and two produced strong contractions of the arms. It is therefore evident, that the effect of this dangerous drug varies with different constitutions, and consequently, if it is to be used at all, some mode must be discovered of giving it in such a manner as to cause the least risk from slight accidental errors in its dose. M. Andral's observations tend to prove that the brucia, besides possessing all the poisonous properties of the strychnia, is likewise endowed with its therapeutic qualities; and it is much safer, because much weaker. But the cases he has recorded by no means realize the flattering prospects which were formerly held out regarding the efficacy of either of these drugs in palsy. They show unequivocally, that neither can be used safely in cases of cerebral palsy, because, if any organic change has been produced in the brain, they have a strong tendency to excite inflammation of the surrounding parenchyma. It likewise appears, that in many cases of palsy, in which no such change has taken place in the cerebral structure, as for example in the palsy caused by lead, they completely fail in their effect. Yet, so far as his researches go, the practitioner has sufficient encouragement to make trial of the remedies, in that form of the disease. Of nine cases, three were cured, three more or less relieved, and three not at all improved. Of

physiology of the nervous system and of digestion, we shall make no apology for detailing them, although they have all been for some time before the public in the works of the British experimenters. 1. They first found, that when the conjoined pneumo-gastric and sympathetic nerves were simply divided in the neck of a dog seven hours after eating, the food was far less altered by digestion than in another animal fed in the same manner, and killed after the same interval, but not operated upon like the former. "The food, however, was somewhat pulpy towards the pylorus, and digestion had evidently begun, as the lacteals contained chyle." 2. They next observed, that when a portion, two inches and a half long, was removed from the conjoined nerves on each side of the neck in a dog newly fed, the alimentary matter, ten hours afterwards, was hardly altered, had a clean, very dry appearance, and was merely besmeared on its surface with a thin coating of chyme. In another dog, treated precisely in the same manner, except that the nerves were simply divided, digestion had advanced very far. 3. Magendie had imagined, that the cause of digestion being impaired or prevented by the section of the pneumo-gastric nerves in the neck, might be the injury done to the respiration by the division of the pulmonary nerves; because he found that the food underwent the usual changes, if the section of the nerves was performed lower down than the giving off of the pulmonary plexus. M. Vavasseur and his coadjutors have shown this supposition to be groundless; for the changes produced by digestion were completely prevented, by tying a double ligature at the bottom of the gullet and dividing it between. 4. Wilson Philip having observed, that the destruction of the lower part of the spinal cord impeded digestion, was led to infer that it is diminished by any cause which weakens the nervous energy. This conclusion has been satisfactorily confirmed by the Parisian experimenters, not only by the repetition of Philip's experiment, but likewise by the effects of injuries done to the brain, either through external force or by internal agents. When a portion of each hemisphere of the brain was removed in a dog newly fed, the food in eight hours was less altered than after the simple section of the pneumo-gastric nerves. And when an animal newly fed was plunged into a state of stupor by the injection of opium into the veins, the food, though considerably changed in eight hours, was much less altered than in another animal not brought under the influence of opium. "We see then," they conclude, "that whenever the intensity of the nervous influence is diminished, digestion is sensibly retarded. Whether the intensity be lessened by destroying a part of the brain or spine, or by bringing the system under the action of stupifying drugs, or by preventing the transmission of the nervous fluid along the nerves which conduct it to the stomach, the same results are uniformly obtained." 5. The last object of their attention was the alleged power of the galvanic fluid to effect the same changes as the nervous influence does on the food in the stomach. They first experimented on the horse. In one, immediately after it had fed on oats, the nerves were divided on both sides of the neck, and a portion removed two inches and a half long. In another this was done on one side only, while the opposite nerve was simply divided, and the lower end detached from its connexions, surrounded with a plate of lead, and connected with one side of a battery of 50 plates. The other side of the battery was then connected to another plate of lead, which was placed in the cavity of the abdomen upon the stomach; and the experimenters satisfied themselves, that the galvanic stream was kept up continuously by the frequent slight contractions of the *panniculus carnosus*. The three animals were killed seven hours after they had been fed. In that which was not operated on at all, the stomach contained a greyish mucilaginous fluid, without any grains; the small intestines a yellow mucosity; the cœcum a large quantity of altered and unaltered grains. In the animal which was galvanized, the stomach contained a small quantity of fluid and some altered grains; and the rest had passed entirely into the cœcum, where the grains were partly soft and chymous, and partly collected in balls. In that whose nerves were divid-

ed, but which was not galvanized, the stomach contained a large quantity of clear yellow liquid, and three times as many grains as in the second; and of these the greater part was unaltered, the remainder half digested; the cœcum contained merely a watery fluid and shreds of chaff, manifestly the residue of a former digestion. It is evident, that, in the last animal, none of the oats on which it had fed immediately before the operation had passed the pylorus; while the whole aliment in the unoperated animal, and at least two-thirds of it in that which was galvanized, had been transmitted into the intestines. The same experiment was repeated with similar results on the dog; and, consequently, we may now consider the statement first made by Wilson Philip, regarding the effect of galvanism in carrying on digestion, as firmly established. Of course, however, the establishment of this fact by no means establishes the inference he proposed to draw from it as to the identity of galvanic electricity with the nervous fluid.—*Ed. Med. and Phys. Jour. April*, 1824.

31. *Elementary Structure of the chief Animal Tissues.*—(Thèse soutenue à la Faculté de Médecine de Paris, par H. Milne Edwards).—This thesis consists of a variety of interesting microscopical observations on the elementary structure of the tissues, by a young Englishman, brother of Dr. Edwards, the well-known physiologist. The tissues which he has examined are the cellular, serous, mucous, muscular, tendinous, dermoid, nervous, and the coats of the vessels. The cellular tissue had been examined microscopically by Fontana alone, who describes it as consisting of tortuous cylinders, less than the finest red vessels. Dr. Edwards finds, that, under a powerful microscope, the supposed cylinders are really lines of globules about 1-7600th part of an inch (1-300th of a millimètre), in diameter; that these lines are sometimes straight, sometimes bent, sometimes tortuous—are separated from each other by an obvious interval, which allows the subjacent layer to be seen betwixt them,—cross each other's course irregularly in every direction, and pass from one layer of the membrane to those above and beneath. This structure is precisely the same in man as in the dog, cock, frog, and carp; which are chosen as examples of the different classes of animals. In the peritoneum, in the mucous chorion, and in the conjunctiva, the size and arrangement of the globules is almost exactly similar. The author hints, that the free space, which exists between the lines of globules in each layer, accounts for the permeability of the cellular and serous membranes, lately maintained by M. Fodéra. The researches of Dr. Edwards on the muscular tissue, confirm the statements made regarding it by former observers. A filament of the *biceps crucis* muscle was chosen for examination. It proved to consist of globules of the same size as in the cellular tissue, united in lines of various lengths, very nearly straight, and almost parallel with each other; and each line constituted an ultimate fibril, which could be isolated without changing the relative arrangement of its globules. The size of these globules does not vary with the age of the individual, as Muys alleges; it is the same in the fœtus as in the adult; and both in size and arrangement, they present the same appearance in man, in the sheep, the fowl, the frog, the carp, the lobster, and the beetle. The tendinous tissue, according to Fontana, is composed of fine threads, disposed in parallel, but undulated lines. Dr. Edwards confirms this description, and adds, that the lines consist of globules of the same size as in the textures already mentioned. The only difference he could discover betwixt muscle and tendon is, that in the former the lines are straight, and in the latter undulated. The structure is identical in the round and flat tendons. The dermoid tissue consists of globules still of the same size, and arranged pretty nearly as in the tendinous tissue; the parallelism of the lines is not quite so exact. The observations on the coats of the arteries and veins are important. The external coat, being cellular tissue, has of course the same structure as that texture in other parts of the body; the inner coat is similar to the mucous tissue; and the middle coat precisely the same as the tendinous, and not composed of straight fibres, like the muscles; it is the same both in the artèries and in the veins,

but in the veins it is very thin, and exists only in the large trunks. Several microscopical observers have investigated the elementary structure of the nervous tissue; but the most accurate previous researches are those of Mr. Bauer, published not long ago by Sir E. Home. According to Mr. Bauer, it consists of globules of three different sizes, arranged in parallel fibrils, exceedingly fragile, and united by a transparent elastic gelatinous-like fluid. Dr. Edwards confirms the greater part of these facts; but he finds the globules to be all of one size, namely, the same as that observed by him in the globules of the other tissues. He also believes, that an adipose matter is interspersed between the lines of globules; "for when a bit of nervous substance is crushed between two plates of glass, drops are disengaged, which are easily recognized to be fat." No difference exists between the cineritious and medullary matter, in the number, size, or arrangement of the globules; and the nervous structure is the same in the brain, in the nerves, and in the spinal cord of all the animals which were examined. The general conclusions, which the author deduces from his observations, are, that the size, form, and disposition of the elementary particles, are the same in all animals, and that their form and size are likewise the same in all the (soft) textures of the body.

On the accuracy of Dr. Milne Edwards's microscopical researches, we shall not venture to offer an opinion; we presume no person is entitled to do so, who has not examined the same subjects with the same care, and with the same habits of observing, with which he appears to have laboured. We can safely say, however, that his memoir contains nothing to excite distrust; he does not begin it, (according to the general practice of the nation where he has fixed his residence,) by undervaluing and setting aside the labours of all former physiologists; and it is written in a spirit of unostentatious good faith, which his adopted countrymen would do well to imitate, and which cannot fail to win the confidence of the reader.—*Ibid.*

32. *Facts in favour of the contagious nature of Croup.*—(*Arch. Gen. de Medecine, Decembre*, 1823. iii. 536).—We are not aware that any serious suspicion is entertained of this deadly disease being contagious or infectious. The two following facts, however, have led several practitioners in France to entertain an idea that it may propagate itself under certain unknown circumstances; and, though very far from being decisive, they are worthy of being recorded, that inquiry may be excited on the subject. The first set of facts is contained in a former number of the same Journal, (II. 625,) and is stated on good authority. A woman having endeavoured to re-animate her child, newly dead of croup, by blowing into its mouth, was seized four days afterwards with the fibrinous form of laryngeal inflammation. The physician who attended her, and who relates the story, one morning, after examining her throat very narrowly, felt all day a gangrenous odour, and at night was also attacked with the same form of the disease.

The other set of facts furnishes better evidence. A child three years old was attacked with tracheal inflammation, running on to gangrene, and terminating fatally on the sixth day. A lady who was very assiduous in her attendance upon this child, took ill three days before its death, and died in the same manner, after five days illness. A child who lived opposite the first patient, and who used often to visit him, was attacked on the day after his death, and likewise perished in twelve days. And, finally, the physician who attended the two last patients, was seized, in his turn, with a very violent cynanche, which yielded, however, to general and local depletion, without running on to gangrene, as in the three other cases. There has been evidently some peculiarity in these cases; for gangrene is a very rare termination of tracheal inflammation.—*Ibid.*

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the three cases cured, none had been palsied longer than two months; the duration of the disease not having been reported in the others, it is possible that the author renders the comparative statement less favourable to the new remedy than the actual fact. For, in a very old and inveterate case, *attended with great emaciation of the muscles*, we presume none of the admirers of the strychnia would expect to procure with it any sensible amelioration, at least in so short a period as M. Andral allowed in his experiments. We should also caution those who may be induced to make trial of this mode of treatment, that, as far as we can judge from the few accurate cases that have been published (from those of Andral with the rest), its success is uniformly associated with the development of the peculiar constitutional action of the drug—that is, to give it a fair trial, it must be continued till it begins to cause trismus, or slight spasmodic twitches in the healthy muscles; for the restoration of the power of the palsied muscles seems never to take place till these effects are manifested. In short, their occurrence is a sign that the system has then, and then only, been brought under the influence of the medicine. This is a consideration which we do not think has been taken into account by many who have experimented and written on the subject; and it is likewise one which will deservedly add to the caution of a practitioner in resolving to have recourse to such a mode of treatment.

35. *Case of Oblongation of the Uvula producing Symptoms analogous to those of Chronic Pneumonia.* By M. Cuynat, Chirurgien-Major, &c.—A female, thirty years of age, born of healthy parents, and possessed herself of a healthy constitution, who had contracted a cough, from frequent exposure to vicissitudes of temperature, after a year's suffering, presented the following symptoms, notwithstanding the "use of the most *heroic* and the most varied means which were considered proper for retarding the progress of a severe disorganization of the parenchyma of the lungs. The respiration was oppressed; a considerable constriction of the thorax existed; and acute, lancinating, and fugacious pains, increased on coughing and on full inspiration, were felt in that cavity; the patient was continually attempting to swallow or to hawk up mucus from the throat; a fixed pain, accompanied with tickling, existed in the larynx; the appetite was almost null; the tongue was sometimes white, and sometimes in a natural condition; her pale countenance, extreme emaciation, depressed condition, both moral and physical, seemed, however, to indicate the profound lesion of some important organ; the chest, carefully explored, resounded very well in every part, except at the upper portion, where the sound seemed a little dull; the pulse was sometimes small, unequal, and at other times frequent and full, and frequently changed in less than half an hour to one or other of these conditions."

M. Cuynat, on examining the fauces, found the uvula elongated, loose on the base of the tongue, and distended with serous fluid. It occurred to him that all the symptoms experienced by the patient were occasioned by the elongation of this appendix. All internal treatment was discontinued, and the superabundant portion of the uvula was cut off. Fifteen days had scarcely elapsed before all the symptoms previously indicated had ceased: the patient was soon completely restored to health.—*Revue Medicale*, Tom. II. p. 353, and *Journal General de Medecine, Dec.* 1823.

36. *Case of Hypertrophy of the Heart.*—M. Chomel, at a late sitting of the *Academie de Medecine* of Paris, presented the heart of a man who had died at the *Hopital de la Charite*. The parietes of the right ventricle shewed such a hypertrophy, that its cavity was almost extinct. The orifice of the pulmonary artery was so considerably contracted, that it could not admit the extremity of the little finger. In the remainder of its extent, the pulmonary artery was of its usual diameter. The other cavities of the heart had preserved their natural proportion. The patient had laboured under the ordinary symptoms of aneurism. There was every reason to believe that, in this individual, who was quite young, the extreme narrowness of the opening, between the right ventricle and the pulmonary artery, was congenital, and that it favoured the

development of the hypertrophy of the right ventricle.—*Archives Generales de Med. Septembre*, 1823.

37. *Syphilitic Ulcers.*—Mr. T. W., a strong healthy man, had been annoyed for upwards of six years with extensive ulcerations in various parts of the body, in consequence of syphilis. These ulcers occupied the scalp, the spine, and legs. Those on the scalp and spine would sometimes, in consequence of the applications externally used, and the remedies taken, remain healed for a month or six weeks at a time; they would then suddenly break out and extend to a considerable size, always putting on the honeycomb character and a dark copper colour. Generally the healing process would begin from the centre, but would not advance regularly, it suddenly becoming, after two or three days, arrested, and the ulceration assuming as bad an appearance as before.

This gentlemen had been salivated three different times, without manifest advantage, notwithstanding it was generally when he was in a state of ptyalism that the ulcers put on their most favourable appearance; the medicine, however, was then obliged to be discontinued, in consequence of the great weakness it occasioned, and its running off through the bowels. Various remedies and applications had been tried, under the direction of some of the most intelligent Practitioners, but the disease resisted all efforts. Under the foregoing circumstances, I advised a trial of the fumigating baths, but not with much confidence of the benefit that would follow. My satisfaction was not little on seeing the amendment that took place after the fourth bath. He took in all eleven in the period of a month. The ulcers on the legs and spine cicatrized completely during their use; but, from causes unnecessary to be detailed, he was under the necessity of discontinuing them, there remaining still some ulcerations on the scalp, which, however, during the three weeks after discontinuing the baths, became firmly healed like the legs and spine, and assumed a healthy appearance.

The first few baths occasioned considerable pain in the ulcerated parts whilst submitted to the action of the sulphurous acid gas: this smarting pain gradually became less until it altogether ceased; the ulcers then regularly and progressively got well. At the end of three months the parts have not shown the least disposition to relapse.

I have now a gentleman, aged twenty, using the baths, for scabies of the purulent kind. It has existed since the age of between nine and ten, occupying particularly the flexures of the joints, the insteps, hams, fossæ of the nates, bends of the elbows; and more or less extending over the whole body, excepting only the palms of the hands and the soles of the feet. He has taken a great variety of remedies, and used as many external applications, but without permanent benefit. He has now employed a bath daily, for the last three weeks, with such progressive improvement, as to lead me to expect his perfect cure. In conjunction with this remedy, he at first took Plummer's pill, but it was afterwards changed for small doses of arsenical solution.

A lady, about forty years of age, whose digestive organs had been for some years in a deranged state, complained of flatulent distention of the stomach and intestines, occasional spasms, and colickly pains, followed by sickness and acrid eructations. Her habit of body had been always constipated, arising, as it was supposed, from a torpid state, and some partial indurations of the liver; and she had frequently suffered from attacks of erysipelas in the face and about the ears. She was much reduced in muscular strength. She had been taking, for a long time, the different preparations of mercury, in various forms, and with other remedies. When she applied to me, the submaxillary and parotid glands, on one side, were so much swollen, as to occasion pain and difficulty in swallowing; and the sterno-cleido-mastoideus muscle was much enlarged and painful, so as to cause the patient to carry her head on one side. She attributed these swellings to a severe cold she took at Brighton last winter, whilst under the influence of mercury. For this

lady's complaints I directed tonic remedies, with an aperient at night; and as the skin was in a harsh dry state, as an adjunct, I ordered her every other day to use a sulphurous fumigating bath. It gave me great satisfaction to find, that, at the expiration of a week, my patient expressed herself better. At the end of three weeks, the swellings had disappeared, and she could move her head without pain; her general health was much improved; the skin had become soft and natural. She now discontinued the baths, but took daily an acidulated decoction of bark, until she considered herself quite well. It is now more than two months since she left off all medicines, excepting an occasional aperient. She has since had some slight colds, but no erysipelas or return of the swellings.

M. B., aged forty-five, a man of robust constitution, had been teazed with a dry scabies: the itching was exceedingly troublesome to him, particularly when he was near the fire or in bed; his general health was indifferent. The disease occupied the hams, but more particularly the hands and arms. In the hands, the fissures were many, and some of them very deep. He took one dram of the lac sulphuris twice a day, mixed with sugar, and used twelve of the fumigating baths, by which means the cutaneous complaint was completely removed.

J. W., a lady upwards of seventy years of age, had been greatly distressed, for the last four months, with *prurigo senilis;* the itching was at times intolerable to her, and from scratching, the surface of her legs was abraded, swollen and inflamed, and oozed a watery discharge. This patient's skin was in a dry shrivelled state, from age and the nature of the complaint. I immediately recommended to her the adoption of sulphurous fumigation, which, after a time, removed the disease.

38. *Dr. Gairdner on the effects of Iodine.*—"Some time after the introduction of iodine into practice, a few cases of severe spasmodic affection of the stomach and bowels occurred. They were attended with violent and incessant vomiting, excruciating pain of stomach and bowels, strong spasms of the back and legs. The tongue was commonly furred, and the bowels sometimes violently purged, at other times obstinately constipated. The pulse was generally extremely frequent, small, and depressed; the eyes sunk and hollow; the countenance ghastly and pale. These accidents were usually imputed by the patients to the iodine they had taken. The physicians, by whose advice the medicine had been given, would not allow this origin of the disease, till a repetition of similar cases determined that the sufferers were right. The vomiting, pain of the bowels, and the cramps of the legs, are extremely severe. They are also with the greatest difficulty allayed, continuing sometimes for many days, and renewed during weeks, and even months, after taking food. The legs sometimes swell in the first instance, and afterwards become rapidly thin and meagre. There is another symptom, which, though common to almost all diseases, is peculiarly the sign of this. The emaciation which attends this irregular action of iodine, is so rapid and so extreme, as to strike terror into the minds both of patients and physicians. A magistrate of Geneva, high in office, robust, corpulent, and of an athletic form, was so much reduced in flesh, that he was not known by his oldest acquaintances. I have seen emaciation, in one case, proceed to such an extent in a short time as is almost incredible. A young English lady, at a boarding-school at Paris, had for some time been afflicted with goitre. Her brother was prosecuting the study of medicine there. With the characteristic zeal of a young man, as soon as he heard of the wonderful effects of iodine, he determined on making trial of its powers on his sister. He did not find much difficulty in persuading her to become the subject of his experiments; nor did he encounter more difficulty on the part of the French gouvernante, to whose care she was confided. The remedy succeeded, as usual, in greatly diminishing the tumour, and for some time no bad effects were apparent. A small hard knot only remained in the situation which had been occupied by a considerable swelling before; and the de-

sire to get rid of this little tumour was the cause of the remedy having been pushed too far. Its deleterious effects first showed themselves by gnawing pain at the upper part of the stomach, great anxiety, and oppression. These symptoms were disregarded, and the remedy was persevered in for a week longer, during which time the patient became very much emaciated; she was frequently affected with vomiting, the pain of the abdomen became more frequent and more severe, and the thirst was very distressing. I was sent for early in the morning, in consequence of an alarming diarrhœa, which had come on during the night; and I found her in a deplorable condition, indeed. Her brother, and the mistress of the boarding-school, were so alarmed at the consequences of their conduct, that they were quite unfit to give any advice about her treatment; they could hardly, indeed, give me a coherent account of what had passed; and the poor young lady was therefore entrusted to the care of servants. She was then suffering the most excruciating pain at the stomach, violent cramps, and convulsive action of the muscles of the arms, back, and legs, from which she had scarcely any intermission. The vomiting and purging were almost incessant. The dejections were bloody, slimy, and very scanty, but at first had been copious and feculent. The matter vomited was of a dark-green colour, streaked with blood. The tongue was loaded with a thick crust, resembling in colour the matter vomited. The countenance was pale, contracted, and with that peculiar expression which announces abdominal suffering. The pulse was small, hard, and frequent,—scarcely, indeed, to be numbered. The whole appearance of the patient, was such as to excite well-grounded fears for her life. Being quite unable to swallow, four grains of opium were directed to be thrown into the rectum; they were not, however, long retained, and were not productive of benefit. An adodyne embrocation was therefore applied to the pit of the stomach: fomentations to the feet, and, as soon as it could be got ready, she was placed in a warm bath. This so much quieted the irritation of the stomach, that she was enabled to swallow about thirty drops of laudanum, from which there was a decided alleviation of her sufferings for nearly an hour. During ten days she remained in a very doubtful state, subject to frequent severe attacks of diarrhœa, with intense pain of the bowels. Her emaciation during this time was most extraordinary. The expression of her French nurse, '*decharnee*,' was literally applicable to her. Her arms and body were almost fleshless; her breasts, which had been large, were now perfectly flat; the calves of her legs had quite disappeared; and her thighs were not much thicker than her wrists, when in health. I never witnessed any thing like such an extenuation in so short a space of time. By the steady and very liberal use of opium, she recovered to a certain degree; but, when I last saw her, many months after her illness, she remained subject to frequent violent spasms of the stomach, during which opium alone gave her relief. Her nervous system had been much shattered. She repeatedly declared to me that she seldom enjoyed an hour's respite from the most wretched depression of spirits, and, since her illness, had never felt any thing like her former buoyancy of mind. The few moments of ease she knew, were purchased by large doses of laudanum, to the habitual use of which her sufferings had forced her. She was still very pale, and her emaciation, though much less, was yet very great. She was, indeed, a miserable monument of the effect of iodine. I heard of this young lady a few weeks ago: she was then much better, had in a great degree recovered her looks, and was able to leave off the use of opium almost entirely. Her stomach, however, still remained very weak, and obliged her to be very careful of her diet. The bronchocele had not returned; but the small hard swelling mentioned above, remained still very sensible to the touch, but not evident to the eye."

The anxiety and depression here described, are, it appears, very frequent attendants on the improper use of iodine, and are regarded by our author as the peculiar effect of the medicine, and not merely the result of the conce-

mitant debility; sometimes occurring in a lesser degree, even when the iodine operates in a salutary manner.

The nervous and muscular systems are next considered in their relations of the effects of iodine; and we are informed, that in some persons, it cannot be exhibited without giving rise to some of the "countless forms of inward nervous derangement." Among these, a certain degree of tremor is so characteristic, as to be regarded by the author, as a measure of the constitutional influence of the remedy. This is described by Dr. Gairdner as generally beginning with a slight trembling of the hands, similar to that resulting from the poison of lead; afterwards the arms, legs, and back, become affected; while, in addition to these symptoms, there is derangement of the stomach and constipation of the bowels. With a view of detecting this affection in its incipient stage, the author recommends the practice of frequently obliging the patient to raise an empty glass, or other light body, to the mouth; by which means the smallest unsteadiness is rendered obvious. This affection obviously bears a strong resemblance to chorea; notwithstanding which, Dr. Gairdner regards them as differing in some essential points.

The external application of iodine has sometimes been accompanied with slight pain at the stomach, and copious bilious evacuations; but these never proceed to the degree of violence which marks its internal exhibition.

When the symptoms of cholera, detailed in the case we have quoted, are brought on by the employment of iodine, opium, in its different forms, is to be regarded not only as the best, but almost as the *unicum remedium*. In the case mentioned by the author, a fourth of a grain of the acetate of morphia, was given every half-hour with great advantage; the other preparations of opium having entirely failed. In other instances, however, this has not answered in so satisfactory a manner. To the opium may be added bitters and astringents, but not until the disease has begun to abate in violence. Purgatives are represented as invariably and conspicuously injurious, however gentle. The warm bath is never to be neglected.

For the chronic stage of the disease, the administration of aperients and opium is recommended; and, for the spasms and nervous derangement, light diet, gentle exercise in the open air, and the warm bath. The use of wine and spirits, as well as the exhibition of the ethers and tinctures, are very strongly condemned.

Dr. Gairdner informs us, that he has used it in "a great number" of cases, without ever meeting with any accident; having discontinued the medicine when the pulse became frequent, small, and depressed, with watchfulness, and flying pains of the joints, &c. Dr. Coindet has given it to 150 patients; Dr. Decarro, of Vienna, to 120; Dr. Erlingen of Zurich, to 70: Dr. Formey and Hufeland have prescribed it "extensively;" and all with beneficial results.

"I have generally ordered half a dram of the hydriodate of potass to be united to an ounce and a half of axunge, and desired the patient to rub in a dram of this ointment over the surface of the tumour, night and morning. When the tumour is painful, it is not necessary to rub in. The ointment may be used in the manner recommended by Scattigna. All that is necessary, is to choose a portion of the surface of the body where the skin is very tender and thin, and simply to apply the ointment over night. For this purpose, almost any part of the body which is habitually covered may be chosen; but in the axilla, and in the inner surface of the thighs close to the scrotum, the absorption will be found most rapid."

The decided effect produced by iodine on the absorbent system, as evinced in the cure of bronchocele, led to its employment in scrofula. The result of our author's observations is thus expressed:

"The first case of scrofula, in which I made use of this medicine, was that of a young lady, eighteen years of age, who had been affected by glandular swellings of the neck for nearly eight years. She used the solution of hydriodate of potass for a month: the dose varied from ten to twenty drops

three times a-day, with occasional intermission of a day, when the absorption was going on rapidly. At the end of this time she had got perfectly rid of her swellings, and she now (two years since she took the medicine,) remains perfectly well. When she discontinued her drops, so far from having been incommoded by them, her health was certainly much improved. There remained several little fistulous sores, which required the assistance of the knife to heal them. The iodine is not equally efficacious in all cases of this kind. Great numbers, however, yield rapidly under its use; but many of them, also, resist its operation. I have never been able to assign even a plausible reason for this difference of its action in scrofula. In general, I have found such cases yield more readily to the internal than to the external use of iodine. The scrophulous glands of children are not so easily affected by iodine, as those of persons who have attained the age of puberty; and they are also more liable to a relapse."

Dr. Gairdner likewise mentions the case of aboy, of five years old, in whom "it was impossible to doubt, from the appearance of the child, that the mesenteric glands were enlarged." He had been weakly from the period of his birth, and had been gradually losing flesh and strength for two years, with enlargement of the abdomen and irregularity of the bowels. The author gave him twelve drops of the solution of the hydriodate of potass in the day, and gradually increased the quantity to twenty drops. At the end of five weeks he was restored to "comparative health," no other medicine having been given, except occasionally a few grains of rhubarb. In two other cases of a similar nature, considerable relief was afforded; but the result was not, upon the whole, so satisfactory as in the preceding instance.

Dr. Gairdner has used iodine in cases where he had reason to believe tubercles existed in the lungs; and he is inclined to believe it will be found of service in incipient stages of pulmonary consumption, but apprehends injury from its operation in more advanced stages of the disease.

"I have here thrown into an Appendix, a brief account of the different preparations of which I have had occasion to make mention. It is chiefly extracted from Magendie's Formulary, which will be found to contain sufficient directions for the chemical and pharmaceutical operations undergone by iodine.

Tincture of Iodine.

Take of Alcohol, of sp. gr. of .842, 1 oz.
Iodine, 39 gr. Dissolve.

"This preparation should not be long kept, as it readily undergoes alteration and decomposition. Alcohol varies in its solvent power of iodine, according to its degree of concentration. The frequent opening of the vessels, therefore, in which it is kept, must occasion a change in the quality of the tincture, by allowing the evaporation of the spirit, and thus occasioning a diffusion of undissolved iodine through this preparation. Mr. Magendie seems also to fear that a decomposition of the alcohol may take place, from the superior affinity of iodine for hydrogen. Altogether this is certainly the most objectionable form in which iodine is used.

Solution of Hydriodate of Potass.

Take of distilled Water, 1 oz.
Hydriodate of Potass, 30 gr. Dissolve.

"I have generally prescribed these two preparations in cinnamon or mint water, in which form they are seldom disagreeable to the stomach. I have avoided, as much as possible, joining them to any tinctures or infusions, as we are yet in a great degree unacquainted with the chemical habits of iodine and the different vegetable substances. It will be sometimes, however, found advisable to use tonics with iodine.

Ointment of Hydriodate of Potass.

Take of Hydriodate of Potass, ½ dr.
Axunge, 1½ oz. Mix."

Lond. Med. and Phys. Jour. April, 1824.

39. *Observations on the Use of Iodine in Medicine.*—Dr. J. G. Kolley, physician at Breslau, has published some interesting remarks on this subject; the results of his experience have led him to the following conclusions:—

1. Iodine, in the form of tincture, prepared after the formula of M. Coindet, appears to exert a deleterious influence on the nervous system. It gives rise, in persons of sensible habits, to disagreeable accidents, even in doses of a few drops: these symptoms may degenerate into violent spasms. Such persons experience, after a few doses, a degree of restlessness in their limbs, which prevents them from remaining in the same position. The result of this is a feeling of lassitude and weight; violent headach, tremors, depression, moroseness, spasm, paleness of the countenance, tears, and great anxiety of the chest. They frequently have a particular dislike to the medicine. As to the rest, these symptoms are entirely different from those proceeding from their being saturated with the iodine.

2. Persons who are disposed to congestions about the head, or any other important organ, who are of robust constitution, muscular frame, well fed, and with the appearance of the bilious temperament, bear iodine ill,—at least, if purgatives are not exhibited at the same time. In these the congestions increase; the head becomes deranged, and cephalalgia comes on to a violent degree.

3. Whenever the digestive organs are not perfectly healthy, having a disposition to cardialgia and colic, the iodine must be given with much caution; otherwise, severe dyspepsia, with violent pain of the stomach, is apt to be induced.

4. All febrile and inflammatory affections absolutely prohibit the use of iodine, be they local or general.

5. The same holds good with regard to the disposition to diarrhœa, local affections of urinary organs, *phthisis pulmonalis*, local affections of the lungs, stomach, liver; and, generally speaking, all those diseases of internal organs which are liable to terminate in suppuration. In persons who live on very nutritive diet, and who drink much wine, the iodine often excites fever and hemorrhage. Hectic diseases likewise contra-indicate its employment.

Iodine, on the other hand, is indicated—

1. In those patients who exhibit no symptoms of an excess of sensibility.

2. Where there are no active congestions, and where the venous system does not predominate.

3. When the digestive system is sound.

4. When there is no fever, nor tendency to diarrhœa, nor any of those morbid conditions specified above: and when the patient is well nourished without overloading the stomach.

The observations of Dr. Kolley incline him to the internal use of iodine, in the form of tincture: in which way it has appeared to him very powerful in the cure of goitre and scrofula. To insure its success in the former of these, it is recommended to ascertain the following circumstances:—1st. That the swelling really exists in the thyroid gland. 2. That there is not too considerable a degeneration: that the goitre is neither scirrhous nor carcinomatous; and that it does not contain either calcareous concretions or similar productions. 3d. That the tumour is not of too long standing. 4th. That there is neither cachexy nor hectic fever, nor saburræ in the primæ viæ, nor any alteration in the mass of the fluids. 5th. That the goitre itself be not inflamed and painful.—(*Archiv fur Mediziniche Erfahrung.*)

40. Dr. Kolley's *Case of Goitre in his own person, treated with Iodine.*—Scarcely had the account of this medicine been published, when Dr. Kolley resolved to try it for a goitre of considerable size, and of ten years' standing, which had already resisted all the supposed remedies of this disease. His respiration was much impeded; he could neither walk quickly, nor for any considerable length of time; he could not go up stairs without difficulty, nor exert his voice. To these symptoms were added frequent and violent con-

gestions about the head. During the employment of the iodine, he scrupulously followed the prescription of M. Coindet (ten drops of the tincture three times a-day in syrup,) for a fortnight: this dose was taken without any inconvenience. During the second fortnight, he experienced disagreeable effects from the increase of the gland; his respiration became very much oppressed, his voice hoarse, the tumour indolent, the congestions violent; he had an unpleasant taste in the mouth, and his appetite fell off. He did not perceive that the excretions were changed. Next fortnight the gland diminished, and disappeared almost entirely in the space of twelve weeks, during which he continued the medicine without intermission. The lower lobe of the right side alone retained some degree of hardness, and the difficulty of breathing disappeared as much as the conformation of his chest permitted. He did not perceive any increase, either in the alvine evacuations, the urine, or perspiration; but he had diarrhœa during some days, having taken forty drops of the tincture at a time. He had no pain at the stomach, though his appetite was rather impaired; and he had frequent headach, which he attributed to congestion. In short, though he continued the use of iodine for three months, perceived none of the symptoms attributed by M. Coindet to what he has called the period of saturation. He did not lose flesh.—*Ibid.*

41. *Effects of Iodine in Scrofula.*—The physician, whose case we have given above, has found the combination of iodine with mercury and tonics extremely useful in all very inveterate cases of scrofula, particularly in ill-grown children, with pale flaccid skin, and with the mental faculties but little developed, the belly large, the limbs crooked, the glands of the neck, axilla, and mesentery enlarged; in whom there existed, at the same time, a disposition to continual suppuration, without the discharge removing the glandular swellings; in whom the employment of internal and external remedies induces the sores to heal, but which soon break out again. In all such cases iodine, given alternately with calomel and tonics, produced great benefit. The tumours diminished in size, and finally disappeared; the suppuration in the glands ceased; the function of the alimentary canal became reinstated, and the colour of the skin improved. Similar benefits resulted in local strumous affections, as ophthalmia and various eruptions. Dr. Kolley has frequently seen cases of this kind, of long standing, and hitherto regarded as incurable, permanently disappear under the use of iodine.

The diet recommended by this writer is analeptic, and taken from animal substances, but extremely rigid; particularly in cases of dartres, in which the patients are not allowed to take wine, spirits, nor even beer, but to drink abundance of water, and always to eat so little that a feeling of hunger remains; while they are to keep in a moderately elevated temperature.—*Ibid.*

42. *New Alkali in Jalap.*—Mr. Hume, jun. of Long Acre, has just extracted from jalap a substance similar to the recently-discovered alkalies of opium, bark, nux vomica, &c. Having procured but a small quantity of this new substance, (for which he proposes the name of *jalapine*,) Mr. Hume is not yet enabled to give any satisfactory account of its chemical properties, nor of its action on the animal economy.

The mode of procuring jalapine is very simple. Coarsely-powdered jalap is macerated, for twelve or fourteen days, in strong acetic acid; a high-coloured tincture is thus obtained, which, when filtered, is to be supersaturated with ammonia, and the mixture violently shaken; a sabulous deposit will fall rapidly, and a few crystals will form on the sides of the vessel. The deposit and crystals are to be collected, and washed with distilled water; again dissolved in a small quantity of concentrated acetic acid, and reprecipitated by ammonia added to supersaturation, which throws down the jalapine, in small, white, acicular crystals.

Jalapine is without any perceptible taste or smell, and seems heavier than morphine, quinine, or other substances of this class; it is scarcely, if at all, soluble in cold water, and only to a small extent in hot water. Ether has no

effect upon it; alcohol is its proper solvent. Very little trouble is requisite to purify jalapine from extractive or colouring matter, for which it appears to have a very slight affinity.

Mr. Hume, jun. operated only upon an ounce of jalap-root, from which quantity he conjectures, that, when the process is conducted with greater accuracy than usually attends a first examination, it will be easy to obtain about five grains of jalapine.—*Lond. Med. and Phys. Jour. April* 1824.

43. *Carbonate of Iron in Neuralgia.*—It appears that in Edinburgh, the carbonate of iron still retains its high character in the cure of Neuralgia, or tic douloureux. The dose of the pulvis antimonialis of the London Dispensatory; the oxydum antimonii cum phosphat calcis of the Edinburgh Pharmacopœia; and the substitute for the celebrated Dr. James's powder, is proved by late experiments, to be a preparation of no power, as instead of the former doses of 4, 5, or 6 grs. Dr. Hawkins has commenced with dram doses, and without producing any effect whatever.

External pressure on the perineum to prevent its laceration during labour, is going out of vogue. Dr. Thomson (Whitehaven) advocates the plan of Mr. Barlow, of making pressure on the child's head to prevent its advance, and as soon as the external parts are relaxed, the head is suffered to slip over the hand and delivery is thus successfully accomplished. The practice of external pressure by bandage to the head proposed by Sir Gilbert Blane in hydrocephalus, proceeding from want of sufficient resistance in the bones of the cranium, has received additional confirmation from the ingenious Dr. Carson, in a case lately under his care. It is evident this plan will do no good in those cases which proceed from inflammation, and is applicable only where the bones, from defect of ossification, do not afford sufficient pressure. The cubebs or Java pepper is recommended in gonorrhœa, fluor albus and rheumatism, by Dr. Crane, of Boston (England). He advises the medicine in doses of from two to three drams, given from three to four times a day, and taken in cold water. It cures gonorrhœa in three or four days. The cubebs should be continued after the gonorrhœa is removed, for ten days or a fortnight. The cubebs when taken in these large doses produces a thin bluish discharge from the urethra, which disappears by the use of injections of a weak solution of sulphate of zinc. It is necessary to avoid animal food and stimulating drinks when taking it. In leucorrhœa it is given in the dose of a dram to a dram and an half, two or three times a day.

In thoracic rheumatism it is given on the same principles. Mr. Guthrie has cured a case of sloughing of the bladder produced by pressure of the child's head in delivery by keeping a catheter constantly in the urethra, and thus contracting the bladder to its greatest degree, and at the same time applying a sponge to the aperture made between the vagina and the bladder. The patient recovered under this treatment, at the end of the third week.

Dr. Callaway relates an unusual case of priapism, which after continuing for sixteen days, notwithstanding the use of the ordinary depletory means, was relieved by opening the penis by a lancet introduced into the corpus spongiosum. Grumous blood escaped with pus by the wound; the penis recovered its natural collapsed state, and never afterwards became erect; the man remaining impotent, in consequence, as was supposed, of the cells of the corpora spongiosa becoming agglutinated by coagulable lymph.—*Edin. Med. and Phys. Journal, for April* 1824.

44. *On Tubercles.*—Dr. Jenner has given some interesting observations on this subject. He has said, "If ever I have seen a case, or cases, in which tubercles have been apparently ever formed and afterwards absorbed, it has been when the individual, either by accident or design, was kept for a while under the constant influence of sickness, either from being tossed about on the ocean, or by the use of those medicines which nauseated. Nothing short of absorption can get rid of that enemy to human existence, and I am clear in

it that starvation and incessant sea-sickness, for a period little short of killing, will often induce the lymphatics to eat up these extraneous bodies, when they can get nothing better. Perhaps the absorbents may thus be made to relish a tubercle better than the scanty and ill-prepared cookery of the stomach and intestines. A man published, a few years ago, a work on Emetic Tartar, professing to cure consumption by giving two grains in a quart of water every morning. He attributed its effects to the *keeping down of the fever*. Mr. Fry, of Dursley, reported to me, that he restored to health a man, about forty-five years of age, who laboured under every symptom of pulmonary consumption, by keeping the stomach in a sickened state for upwards of a month. The whole quantity, as above, was taken daily at intervals, in such portions as to nauseate. Might it not be good in general scrofulous disorders?"

I have had but few opportunities of giving this mode of treatment a fair trial. In one suspicious case of induration of the mammæ in a female, who laboured under symptoms of mental derangement, I had not only the pleasure of seeing the progress of the tuberculated and knobby feeling of the breast suspended, but the cerebro-mental disorder greatly diminished by the same treatment. Blood was drawn with cupping-glasses from the breast, and the tincture of digitalis and tartar emetic given in sufficient quantities to excite a protracted loathing nausea. After a time, this female took such a dislike to this combination, that she declared that she would rather die than bear the sensations which it produced. Her mental malady became worse; but, after the lapse of three years, the affection of the breast has made no progress. There are cases, however, of this kind, which do not terminate in true carcinoma. I have already alluded to the beneficial effects of the digitalis and tartar emetic in correcting both erroneous, glandular, and absorbent action, in those ill-conditioned and emaciated states of the frame, in young persons, in which more especially the functions of the mucous membranes of the intestines and of the lacteals are disordered. In these cases, the morbid alvine excretions generally consist of slime of various colours.*

45. *Emetine of the Violet or Violine.*—At a late sitting of the *Academie Royale de Medecine*, Section of Pharmacy, M. Boullay read a *Memoire* on the analysis of the violet, *viola odorata*, from which it appears that the violet contains an active, alkaline, bitter, and acrid principle, similar to the emetine of ipecacuanha, which the author proposes to distinguish by the names of *emetine of the violet, indigenous emetine or violine*. This substance, according to M. Orfila, possesses very powerfully poisonous qualities.

It is somewhat remarkable that the active and emetic principle of the violet resides equally in the root, the leaves, the flowers, and even in the seeds. In each of these parts it is found associated with different immediate principles, which modify its action on the animal economy.

The active principle of the violet was at first obtained in a state similar to the emetine of the ipecacuanha, possessing similar properties; but with this difference, that it was united to the malic acid, instead of the gallic acid which is found in the ipecacuanha.—*Journal de Pharmacie, Janvier*, 1824.

46. *Formula for a Preparation of Magnesia.* By M. A. Chevallier, Pharmacien.—The earthy taste which is left in the mouth by magnesia, when taken in powder or in a liquid, induced M. Chevallier to endeavour to prepare a compound in which it might be masked by some agreeable corrigent: for this purpose, he made use of chocolate in the following proportion:—

Chocolate, ℥ij.
Sugar, ℥v.
Pure Magnesia, ℥j.

* It is my intention elsewhere to give cases illustrative of these important points.

Form into lozenges of twenty-four grains each; which, although they contain an eighth part of magnesia, have not any disagreeable earthy flavour.

These lozenges have been used by many individuals with great satisfaction. —*Ibid. Fevrier*, 1824.

47. *Case of Quartan Intermittent.*—It is supposed by persons in general, that nothing is more easy than to cure an ague, but medical men know full well that agues are often extremely obstinate. The mere circumstance of the vast variety of remedies which has been proposed for their removal is sufficient to prove that they are no puny champions among that host of diseases by which we are environed. Of these remedies, some are hardly at all to be depended upon; some, though they frequently succeed, fail also frequently: a few are doubtless more generally efficacious; but I am acquainted with no medicine, or combination of medicines, which can be termed a specific for intermittents. Our inquiry, then, after new remedies should be zealously continued; and when a substance easy to be procured, and harmless in its nature, is introduced to our notice, does it not deserve a fair trial? Charcoal is of this description; yet, I know not for what reason, it has been disregarded by medical men in this country. In 1812, it will be recollected that Dr. Calvert, Physician to the British Forces in the Mediterranean, published a pamphlet, entitled "Effetti del Carbone di Legno sulle Febbri Intermittenti," in which, after mentioning that Dr. Calcagni, Physician to the Hospital of Palermo, as well as other Sicilian Practitioners, had before him exhibited charcoal as a remedy for intermittents with eminent success, he proceeds to relate several cases in which he had employed that substance, and had by it cured the disease. Dr. Calvert republished these cases in the Edinburgh Medical and Surgical Journal for January, 1814; and in October of the same year he wrote a second paper upon the subject of charcoal. In the Medical Repository, Vol. III. p. 7, the discovery of Dr. Calcagni is noticed, but not in terms expressive of any faith in the remedy. Since that time, no notice, I believe, has been taken of it: at least, it has never happened to me to hear it spoken of since my return to this country. I had not, however, forgotten what I had learned of its efficacy in Sicily, and a short time ago I met with what appeared to be a good opportunity for employing it.

Daniel Bayley, aged fifty, was admitted into the hospital July 25th. He had become affected by quartan ague while in Romney Marsh, and, in spite of medicine, it had continued to hang about him for full fifteen months. Half a dram of charcoal powder was prescribed every two hours during the intermission. This dose was begun on the following day, and on the 28th it was increased to ʒj. A draught, with æther and laudanum, was directed to be taken should the paroxysm return. It did return in the evening, but was shortened by the draught. On the 31st the patient had as severe a fit as ever, and he complained so much of nausea and heat of stomach, that the charcoal was discontinued.* Though it had disappointed me in this instance, I determined not to abandon it without further trial, and I mentioned it to several of my medical friends in this neighbourhood. I am now enabled to state, that a patient of Mr. Ridout, of Herne, has been completely cured by charcoal combined with magnesia. The name of the patient is Mercy Brown, aged fourteen. She had been labouring for a long time under tertian intermittent, which had resisted bark and other medicines. Charcoal, ʒss. was first ordered every three hours. After twelve doses had been taken, the type of the fever changed to quartan. Bark was again tried, but it failed; then the charcoal was resumed, with ϑss. of magnesia to each dose. On the following day the ague recurred, but it was for the last time. The patient has now been quite well for two months.

48. *Cases of Epilepsy.*—It will probably be recollected by the readers of the

* The disease was subsequently checked by decot. cinch. with liq. arsenic. and tinct. opii.

Repository that, in April, 1823, a case of epilepsy was laid before them, in which the tartar emetic ointment seemed to have had the effect of suspending the disease for many months. The patient, Turner, has not to this day been struck off the hospital books, and he has attended occasionally there to report the state of his health. When his case was published, I entertained some hope that the paralytic affection of his arm might be removed; but I am sorry to say it remains much in the same state. In the course of last summer he had several returns of hysteric laughter, which distressed him exceedingly, but he had no fits, and was now and then able to assist in a garden near his cottage. He complained that the pain and soreness of the arm to which the ointment was used impeded him in the little work he was able to do; and as he had continued exempt from any attack for so long a period, I was disposed to prove what would be the result of allowing the sore to heal. It was accordingly healed, and for some time the man remained tolerably well. November 6th, however, he complained of pain and giddiness of head, and constipation. Twelve ounces of blood were taken from the temporal artery, a dose of oleum terebinth. was given, and a saline mixture was ordered.

He was relieved at the moment, but he again applied on the 16th, having had a strong fit that morning. Upon questioning him, it was discovered that he had also had a fit previously to the 6th, but had concealed the circumstance, fearing that the ointment would be resumed. It now was resumed, he had leeches to his temples, and the pills with croton oil were directed to be taken as formerly. From the day that the patient began rubbing in the ointment up to the present date, March 1st, he has had but one fit, and that occurred before any effect had been produced by the remedy.

In Turner's case, then, the ointment has been decidedly of great service; and it affords me much pleasure to find, by the report of my colleague Dr. Chisholm, that it has succeeded in his practice also.

I have a case now under my care of epilepsy of twelve years standing. A drain has been kept up for upwards of three months by means of the ointment, and the patient has had no fit, though, just before she came to the hospital, the attacks were at much shorter intervals. As, however, she has formerly been free from them for above a twelvemonth at a time, nothing conclusive can be drawn from her present immunity from them. In a future report, I shall offer a faithful history of this case.

We can hardly expect uniform success from this remedy; and I think it fair to state, that in more than one instance it has failed, in common with every other.

James Twyman, aged sixteen, became out patient August 29th. He had been subject to epileptic fits since the preceding Easter, and it was stated that they recurred regularly at the new and full moon. The young man was of sanguine temperament; there was evidence of great fulness about the head; his countenance was flushed, eyes heavy, and there was general dulness of manner. His pulse was full, and rather hard. Tongue white. Bowels rather costive. Blisters were applied behind his ears, and a discharge maintained by an ointment containing a small proportion of tartar emetic. He took every other morning, inf. gent. c., inf. sennæ, āā dram vj., magnes. sulph. dram iij. He returned home for a fortnight; and when I saw him again, September 12th, I learned that he had had a fit just before the new moon. He was now admitted into the hospital. The same medicines were continued; and three or four days previously to the moon being at full, twelve ounces of blood were taken from the temporal artery. He had no attack. He was again bled just before the new moon, and escaped a fit. The bleeding was, I think, repeated three or four days before he quitted the hospital, which he did on the 17th, without experiencing any symptom of a return of his disease. He was charged, in the event of his being again attacked, to apply for readmission, but I have heard nothing of him since he was discharged.—*Ibid.*

49. *Brief Notice of Cases in which the Balsam of Peru has been successfully*

employed.—1. Cath. Barber, aged thirty-four, out patient. March 29. This poor woman had formerly been under my care, with symptoms of extreme debility arising out of a naturally feeble constitution, rendered yet more feeble by hard work, poor living, and frequent child-bearing. She had taken bark, with aromatic confect., myrrh, and sp. lavand. c., with some advantage; but after ten weeks trial of these and similar medicines, she had made but little advance towards recovery. June 20th, she began the balsam of Peru in the dose of gr. vj. in pills three times a day. She felt more benefit from them than from any other medicine she had taken; and, after persevering in them regularly till the beginning of September, she was discharged with her general health greatly improved.

2. Mary Filmer, aged fifty-one, was made out patient June 5th, with symptoms of hysteria, fluttering at the heart, sinking at stomach, &c. &c. She took a variety of tonic and cordial medicines, with little effect. At length, October 21st, she began taking the pills of balsam of Peru, with half a dram of sp. ammon. aromat. and sp. lav. c. in a wine-glass of water, thrice a day. She expressed herself as having derived much benefit from the pills, and was discharged cured November 21st.

3. In the case of Elizabeth Bateman, aged forty-two, labouring under general debility, leucorrhœa, &c., the balsam of Peru was also very useful; and, again, in that of Elizabeth Taylor, affected by hysteria. Both these patients were discharged as having received benefit.

The following case demonstrates that it is a useful medicine in certain chronic affections of the lungs, where little, if any, inflammation exists:—

4. John Booth, aged fifty-six, was admitted, September 12th, in a state which, at first view, seemed to be hopeless. Upon examining, however, more minutely into his symptoms on the following day, appearances were less unpromising. The poor man had recovered from the fatigue of his journey; and though he had violent cough, with profuse purulent expectoration streaked with blood, laboured respiration, sense of weight at the pit of the stomach, and heavy night sweats, yet he was not much emaciated; and his pulse was firm, rather full, and not more than 76 in the minute. He stated that his illness had been brought on by wearing damp linen; and, though I could gather little from his own account of the early symptoms of his complaint, it seemed sufficiently evident that he had laboured under inflammation of the lungs, which had terminated in abscess. He was bled once, and the blood exhibited some appearance of inflammation, but its abstraction afforded no relief; nor did I perceive that any medicine was of much use, unless, perhaps, it was the hydrocyanic acid, which seemed to moderate the violence of the cough, but which caused such nausea and confusion of his head, that I was obliged to discontinue it.

October 18th, the patient remaining nearly in the same state, I gave him gr. vj. of bals. Peru, in pills three times a day, in addition to a mixture of inf. rosæ, cum decoct. cinch., tinct. myrrhæ, et syr. papav., which he had been taking before. He continued also a pill of opium and extract of hyoscyamus.

From the date last mentioned to the period of his being discharged, November 7th, he certainly improved in some measure. He coughed and expectorated less, and gained strength a little. I do not pretend to say that the improvement was rapid or very striking, but it was, I think, sufficient to encourage me to employ the same remedy again, should I meet with a similar case. Booth was discharged at his own request, as he felt better, and was anxious to return to his family, and I have received no intelligence respecting him since he quitted the hospital.

5. In a case of extreme debility, with petechiæ, but no fever, occurring in a young woman, by name Elizabeth Chandler, aged sixteen, nothing was of such decided benefit as the balsam of Peru. Bark, with myrrh. and sp. ammon. aromat., mist. ferri c., pill. ferri cum myrrhâ, acids, &c., were tried, but she made little progress. At length, after taking the pills for a month, I was enabled to discharge her cured. Her general health was materially improved, and hardly a vestige of the petechiæ remained.

MEDICAL INTELLIGENCE.

UNIVERSITY OF PENNSYLVANIA AND PENNSYLVANIA HOSPITAL.

The managers of the Pennsylvania Hospital, with the most commendable liberality, have presented the valuable anatomical cabinet of that Institution, to the University of Pennsylvania. It consists of numerous wax models, of the natural structure of the human body, by the late Dr. Chovet, in dried and wet preparations, tumours and urinary calculi, which have been taken from the hospital patients, diseased and variously injured bones, and specimens of natural history.—The managers have also deposited, for the benefit of the medical students who attend lectures at the university, the very celebrated anatomical crayon drawings and obstetrical casts in plaster, presented to the hospital in 1762, by the late Dr. Fothergill, of London. The circumstances attending the donation by Dr. F, are thus narrated by Dr. Wistar in his life of Dr. Shippen, the first professor of anatomy in the university, "At this time also commenced his acquaintance with the truly philanthropic physician, Dr. Fothergill. The people of Pennsylvania seem always to have been regarded with affection by this gentleman, but at the present period he was more interested for them than usual. The Pennsylvania Hospital had lately been erected: he took it for granted that the students would resort to it, and supposed they would experience great difficulty in acquiring a knowledge of anatomy. To remedy this defect in their medical education, he employed Rymsdyck, one of the first artists of Great Britain, to execute the crayon paintings, now in the hospital, which exhibit the whole structure of the body, at two thirds the natural size, and the most useful obstetrical representations. Jenty, an anatomist of London, is said to have made the dissections from which these paintings are taken, and Dr. Wm. Hunter sometimes examined the work. They are supposed to have cost 200 guineas, and with 100 gnineas in addition, which he contributed to the Institution, constitute a most substantial proof of his regard, as well as of his liberality."

MEDICAL SOCIETY OF VIRGINIA.

The following is an "abstract" of the act of Incorporation, passed by the legislature of Virginia on the 2d January 1824, to take effect from the passing thereof.

"Be it enacted by the General Assembly, that William Fousher, sen. George Calwell, George Watson, James Henderson, John Hayes, Micajah Clark, Thomas Nelson, William A. Patterson, James Blair, William H. Hening, James Warral, John Adams, Lewis W. Chamberlayne, Robert H. Cabell, R. A. Carrington, John Dove, Branch T. Archer, William Tazewell, Nathaniel Nelson, Edward H. Carmichael, R. L. Bohanan, Philip Augustus Klepstine, Wm. R. M'Caw, as well as all others who may hereafter be admitted to membership with them, be a body corporate and politic, by the name of the "*Medical Society of Virginia*," that they shall be capable of suing and of being sued in any of the courts of law or equity of this commonwealth, that they shall have perpetual succession, and be authorised to use a common seal.

"Be it further enacted, that they may make such laws for their own government as they may deem necessary—provided they be not contrary to the Constitution and Laws of the United States or of this commonwealth."

The subsequent clauses authorise the erection of such buildings and the tenure of such property, as may be necessary for the personal accommodation of the Society—as Lecture rooms, Dissecting rooms, &c. &c.

TH. NELSON,
Corresponding Secretary.

The Calysaya Bark, (Calisaya Arrollenda,) is beginning to attract attention as a remedy for intermittents. Mr. Carpenter, an ingenious chemist, states that double the usual quantity of the sulphate of quinine can be obtained from it.

We have received a communication from Dr. W. L. Sutton, of Morganfield, Kentucky, of an operation for the extirpation of the scrotum and testicle on one side; the patient had been affected with hydrocele for sixteen years. About two years before, he was thrown from his horse and his testicle was injured; the disease increased; the operation for hydrocele, by injection, was performed; no inflammation followed the usual injection; a solution of corrosive sublimate was tried without effect; the wound, as might have been expected, after the operation, discharged a fœtid sanies, and the disease increased; the testicle and scrotum on one side was completely removed; the tumour resembled cerebral matter in its structure, and the patient recovered in about nine weeks.

A correspondent at St. Petersburg informs us that the cholera morbus has made great ravages in Russia. It was brought to Astracan by the Persian caravans, travelled round the Caspian and the Euxine Seas, and carried off, during the last summer and autumn, from 10 to 15000 persons. The patients died with the black vomit and in convulsions.

An association for the purpose of correcting abuses in the profession of medicine has been formed in this city, and a weekly paper, called the Æsculapian Register, to support the same objects, in imitation of a valuable paper of the same kind in Boston, intitled the Medical Intelligencer, has also been established. We understand the College of Physicians of this city are turning their attention in the same direction, and from the highly respectable character of that body, assisted by their medical brethren, it is hoped something of importance may be the result. A medical atheneum, or reading room, has been mentioned; the expense, it is believed, would be about five dollars annually to each member.

The public are cautioned against using *Cheese covered with Leads*, whether red or white, as both are poisonous. The attention of the public is requested to the following facts.

In this town a cheese was bought last year, and *four* of the family, immediately upon eating some of it, were taken severely sick. The cheese was examined by the attending physician, and judged to be overlaid with *red lead*. The same cheese was eaten by several others, *the rind being previously taken off*; they were soon very sick, but were relieved by vomiting.

A few weeks ago, three of another family became exceedingly ill, cause unknown; but was soon supposed to be produced by cheese covered with white lead. A dog which ate the rind was extremely convulsed, and in a day or two died. Another ate of it, and became very ill; to which a dose of lamp oil was given, and having cast up the rind, which remained almost entire, recovered. A third dog, which took but little, was sick. Fifteen or twenty persons in this town the last year and this, have been made sick, and most of them *very* sick, by means of lead on cheese.

We understand that the College of Apothecaries have examined into the adulteration of the sulphate of quinine, mentioned in our last number, and

contemplate taking measures to prevent, by their influence, the recurrence of these dangerous frauds. The practice of poisoning the waters of a country to destroy an enemy during invasion, is considered as cruel and contrary to the customs of civilization; how much more so must be the individual, who, to gain a little money, betrays the unsuspecting physician, and seriously injures or destroys the helpless sick. In Delaware, some years ago, a whole neighbourhood was poisoned by litharge administered in bark; the physician fled. These evils, if not met by the law, will be by the good sense of the people. Accordingly, in one of the western states an empirical practitioner has lately been expelled from a village in a summary way. He was conducted by a general rising of the medical men to the suburbs, and banished. If such a proceeding were attended by the respectable men of the community, its influence must be decided. Indeed, the miserable beings, who thus practise on the lives of their fellow men, should be regarded as objects of commiseration, and any peaceable and lawful mode of rescuing them from their evil practices should be regarded as a favour done to themselves and to society. The principles on which medicines are administered consist of a series of elaborate intellectual processes, which apply the various agents of the mineral and vegetable kingdoms to the successive and changing periods and types of diseases. To apply one remedy as a cure for all diseases, or the same remedy to the varying types of one disease, will often endanger life. The medicines of empirics, on this account, soon lose their character, and continually give way to the power of the regular practitioner, who, like the skilful navigator in a storm, alters his plans, and judiciously varies his course, with the numberless accidents which are continually rising around him.

In the north of Europe, a professor, guilty of plagiarism, has lately been disgraced and driven from his place. As the turmoil of war has ceased, the morality of the world will, no doubt, be improved, both as regards the petty crimes of scientific men, and also of society generally.

A society under the title of the Academy of Natural Sciences has for some time been established in this city. It promises to be highly useful; geology, mineralogy, chemistry, botany, and natural history are its objects. Its results to the science of our country promise to be great. Mr. Le Sueur, a distinguished naturalist from France, Charles Bonaparte, Ord, Say, Nuttal, Worth, contribute papers on natural history. Harlan, Horner, on anatomy; the former also on antediluvian remains, the track of the great Cuvier. Troost, Seybert, Vanuxem, make contributions on chemistry. Mr. Maclure, its worthy president, has given several papers on geology, which have attracted notice. This is one of the most celebrated societies of North America. Its papers are edited by Messieurs Say, Hays, Lea, Griffith, and Keatting.

University of Maryland.—At a public commencement held in this University on the 5th ultimo, the degree of Doctor of Medicine was conferred on each of the following gentlemen:

Thomas B. Duckett, Maryland; Yellot Dashiel, Maryland; George I. Hardy, Maryland; William O. Peake, Virginia; James A. Boggs, Maryland; Henry W. Baxley, Maryland; Albert H. Prosser, Virginia; John T. Temple, Virginia; Francis C. Fitzhugh, Virginia; George E. Pryor, Pennsylvania; Wesley Woods, Maryland; William Norris, Maryland; Galen Jones, Pennsylvania; Reuben Summers, Maryland; Edward W. Jones, South Carolina; Bartholomew Fussel, Pennsylvania; Henry Miller, Maryland; Robert H. Griffith, Delaware; Joseph C. Hays, Maryland; Andrew B. Woodley, Virginia; William Hitch, Maryland; Richard Dorsey, Maryland; Randolph Bradford, Maryland; An-

thony B. Cleveland, Maryland; Dennis F. Moon, South Carolina; John B. Blake, District of Columbia; John H. D. O'Donovan, Maryland; James Aitkin, Maryland; B. W. Branham, Virginia; Jefferson Minor, Virginia; William Crosland, South Carolina; John R. Chandler, District of Columbia; Robert Ballard, Maryland; Edward Sparks,* Maryland; John Brien, Maryland; James J. Williams, Virginia; William Waters, Maryland; Septimus Davis, Maryland; Lewis Mackall, District of Columbia; Humphrey Bowie, Maryland; Ezekiel S. Tally, Virginia; Elijah Gates, South Carolina; John P. Morrison, Pennsylvania; Elias H. Merryman, Maryland; Josias D. Whitaker, Maryland; Peyton Robertson, Tennessee; Benjamin B. Hodges, Maryland; John Fisher, Maryland; Lewis L. Dickerson, Maryland; William W. Wolfe, Delaware; Joshua Riley, District of Columbia; Richard Corbett, South Carolina; Charles A. Gullatt, Virginia; Benjamin Anderson, Virginia; George W. Robertson, Virginia; James Bond, Maryland; David King, Maryland; Thomas Handey, Delaware.

The honorary degree of M.D. was conferred on Dr. Frederick Dorsey, of Hagerstown, Md. and Dr. Henry Hunt, of Washington, D. C.

ELISHA DE BUTTS, M.D.
Dean of the Faculty of Physic.

At a meeting of the Philadelphia Medical Society, held on Wednesday evening, 4th February, 1824, the following gentlemen were elected Officers for the ensuing year:

President,	Dr. Physick.
Vice-Presidents,	Dr. Parrish, Dr. S. Jackson.
Corresponding Secretaries,	Dr. Emlen, Dr. Bell.
Treasurer,	Dr. H. L. Hodge.
Library Committee,	Drs. Randolph, Condie, R. E. Griffith.
Librarian,	Dr. Tresse.
Orator,	Dr. K. Mitchell.
Curators,	Drs. Tresse, Drake.

And on evening, February 28th, the following gentlemen were appointed lecturers for the session of 1824 and 25.

Drs. Atlee,	Drs. Godman,
Bell,	Gibson,
Bache,	Griffith, R. E.
Bond,	Horner,
Barton, W. P. C.	Harlan,
Chapman,	Hodge,
Coxe, J. R.	Harris,
Coxe, Theod. D.	Hays,
Condie,	Hopkinson,
Colhoun, Samuel	Hewson,
Colhoun, Gustavus	Hartshorne,
Coates, B. H.	James,
Dewees,	Jackson,
Darrach,	La Roche,
Eberle,	Mitchell, Thomas D.
Fox,	Mitchell, K.

* This gentleman became entitled to the Gold Medal, for having written the best Latin Dissertation.

Drs. Meigs,
Moore, J. W.
Nancrede, J. G.
Neil,
M'Clellan,
Parrish,
Rhees,
Randolph,
Rousseau,
Ritchee,
Shoemaker,
Shaw,
Wilson, S.

Berkshire Medical Institution.

Williams' College, (Mass.)

The annual course of medical lectures in this Institution, commences on the second Wednesday of September, and continues four months. Since the last season, the lecture rooms and anatomical theatre have been enlarged, and the apartments for students thoroughly repaired. The commons-house is a very superior building, in point of architectural beauty as well as conveniency, in which the trustees have made arrangements for boarding, washing, and lodging medical students, at the moderate price of $1 75 per week, including rent.

The anatomical collection of wax models, belonging to the museum of the Institution, exhibiting most of the minute parts of the human body, are of great value. Arterial preparations, specimens of morbid anatomy, and the mineralogical cabinet, have been selected with great care, and are believed to be inferior to none in New-England. The lectures upon anatomy are given every morning at 10 o'clock, throughout the whole term. Degrees are conferred on Thursday, following the close of the lectures, and at the annual commencement of Williams' College.

Medical Faculty.

John P. Batchelder, M.D. Professor of General and Operative Surgery.

Jerome V. C. Smith, M.D. Professor of General Anatomy and Physiology.

Henry H. Childs, M.D. Professor of Theory and Practice of Physic.

John Delamater, M.D. Professor of Obstetrics, Pharmacy, and Materia Medica.

Chester Dewey, A.M. A.A.S. Professor of Chemistry, Botany, Mineralogy, and Natural Philosophy.

Stephen W. Williams, M.D. Professor of Medical Jurisprudence.